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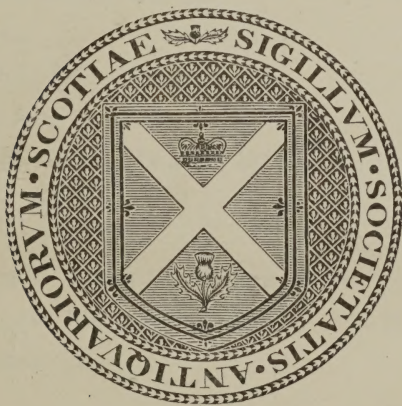
## SOCIETY OF ANTIQUARIES OF SCOTLAND.

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SESSIONS

MDCCCLXX-LXXI.—MDCCCLXXI-LXXII.

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VOL. IX.

EDINBURGH:

PRINTED FOR THE SOCIETY BY NEILL AND COMPANY.

MDCCCLXXIII.

THE UNIVERSITY OF

SOCIETY OF AMERICAN HISTORIANS

THE UNIVERSITY OF CHICAGO



VOL. 12

EDITION 18

THE UNIVERSITY OF CHICAGO

CHICAGO, ILL.



# CONTENTS.

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	PAGE
Table of Contents of Parts I. and II., . . . . .	i
List of Illustrations, . . . . .	ix
List of Office-Bearers, 1871-72, . . . . .	xiii
List of Fellows to June 30, 1872, . . . . .	xv
List of Honorary Members to June 30, 1872, . . . . .	xxvii

---

Proceedings during the Ninety-First Session, 1870-71, . . . . .	1
Proceedings during the Ninety-Second Session, 1871-72. . . . .	351
Index to this Volume, . . . . .	675



# TABLE OF CONTENTS.

## PART I. 1870-71.

	PAGE
Anniversary Meeting and Election of Office-Bearers, . . . . .	1
Additional Notice of the Manuscripts of Fordun's Chronicle. By WILLIAM F. SKENE, Esq., LL.D., F.S.A. Scot., . . . . .	13
Notes of Early Monumental Art in the West Highlands. By JAMES DRUMMOND, Esq., R.S.A., F.S.A. Scot., . . . . .	24
On the Round Castles and Ancient Dwellings of the Valley of the Forth, and its Tributary the Teith. By MISS C. MACLAGAN. Communicated by JOHN STUART, Esq., LL.D., Sec. S.A. Scot. (Plates I.-III.), . . . . .	29
Notes on the Shell Heaps near Inveravon, Linlithgowshire. By DAVID GRIEVE, Esq., F.S.A. Scot., . . . . .	45
Notice of the Excavation of the Pictish Towers at Cinntrölla, Carnliath, and Craig-Carril in Sutherland, with Notes on Neighbouring Brochs; and an appended Report by T. Aitken, M.D., F.A.S.L., Inverness, on the Crania found in and about them. By the Rev. J. M. JOASS, Golspie, Corr. Mem. S.A. Scot. (With Plans, Drawings, and Photographs.), . . . . .	60
Notice of the Brochs or Round Towers of Orkney, with Plans, Sections, and Drawings, and Tables of Measurements of Orkney and Shetland Brochs. By GEORGE PETRIE, Esq., Kirkwall, Corr. Mem. S.A. Scot., F.R.S.N.A. . . . .	60
Observations on the Value of Rubbings in the Preparation of Monumental Drawings (Illustrated by Drawings, Rubbings of Slabs, Rock-Sculpture, &c.) By Captain T. P. WHITE, R.E., F.S.A. Scot., . . . . .	60
Note of a Donation of Four Sculptured Stones from Monifieth, Forfarshire. By JAMES NEISH, of the Laws, Esq., F.S.A. Scot. (Plates IV.-VI.), . . . . .	71
Descriptive List of Antiquities near Loch Etive, Argyllshire, consisting of Vitrified Forts, Cairns, Circles, Crannogs, &c.; with some Remarks on the Growth of Peat. By R. ANGUS SMITH, Esq., Ph.D., F.R.S., &c. (Plates VII.-XII.) Part I., . . . . .	81



	PAGE
Notice of Ancient "Feeding-Bottles" for Infants (one containing Remains of Milk, recently Presented to the Museum of the Society); with Notes of the Discovery of similar Vessels in Gallo-Roman Graves, and Instances of their Occurrence in England. By JOHN ALEXANDER SMITH, M.D., V.P.S.A. Scot., . . . . .	106
Additional Note on Easter Island, on the Discovery of Carved Planks of <i>Toro-Miro</i> Wood. By Lieut. COLIN M. DUNDAS, R.N. Communicated by ARTHUR MITCHELL, M.D., Sec. S.A. Scot., . . . . .	116
Notes on Materials found in a Kitchen Midden at Hillswick, Shetland, with special reference to Long-Handled Combs. By MILLEN COUGHTREY (Student of Medicine), Edinburgh University. Plates XIII.-XVIII., . . . . .	118
Note of the Excavation of some Tumuli at Melville Moor. By the Rev. JAS. BRODIE, Monimail, Fife, Corr. Mem. S.A. Scot., . . . . .	151
Notice of the Gallow Hill, Auchterless, and of Circular Foundations and Tumuli, and various Relics discovered there. By Mr JAMES FORREST, Schoolmaster, Auchterless, Aberdeenshire, . . . . .	157
Notice of the Shingled Roof of the Tower of the Canongate Tolbooth, Edinburgh. By JOHN ALEXANDER SMITH, M.D., V.P.S.A. Scot., . . . . .	162
Notices from Original Documents relating to John Anysley, Constable of Norham Castle, Prisoner in Scotland in 1514, and of his Murder on his Journey to England in that Year. By EDWARD PEACOCK of Bottesford Manor, near Brigg, Lincolnshire, Esq., F.S.A., . . . . .	167
Notes of Stone Celts found in Glenshee, Forfarshire, 1870; and of Clay Cones (Loom Weights) found at Ravensby, Parish of Barrie, Forfarshire. By JAMES NEISH, of the Laws, Esq., F.S.A. Scot., . . . . .	174
Note on the Sculptured Stone, with Spectacle Ornament, recently discovered at Bilton, Yorkshire. (A Cast of the Stone was Exhibited.) By the Rev. Canon JAMES RAINE, York, in a Letter to John Stuart, LL.D., Secretary, . . . . .	177
Notes of a Roman Sculptured Stone recently discovered at Cumbernauld, and of an Inscribed Stone at Stirling, &c. (With Photograph and Copy of the Inscription.) By Miss C. MACLAGAN, Ravenscroft, Lady Associate S.A. Scot., in a Letter to the Secretary, . . . . .	178
Notice of a Collection of Antiquities in Stone and Bronze found under Blair-Drummond Moss. By the Late HENRY HOME DRUMMOND, of Blair-Drummond, Esq., . . . . .	179

## TABLE OF CONTENTS.

iii

	PAGE
Notice of a Highland Target, having Embossed upon it the Cognisance of the Lord of the Isles. By JAMES DRUMMOND, Esq., R.S.A., F.S.A. Scot. (Plate XIX.), . . . . .	185
Notice of a Cinerary Urn, containing a small sized Urn (in which were the Bones of a Child), discovered in Fifeshire; with Notes of similar small and cup-like Vessels, in the Museum of the Society of Antiquaries of Scotland. By JOHN ALEX. SMITH, M.D., V.P., S.A. Scot., . . . . .	189
Present Condition of Lindores Abbey. By ALEXANDER LAING, Esq., F.S.A. Scot., Newburgh, Fife. (Plate XX.), . . . . .	208
Notice of Excavations in a Broch and adjacent Tumuli near Levenwick, in the Parish of Dunrossness, Zetland. By GILBERT GOUDIE, Esq., F.S.A. Scot., . . . . .	212
Edinburgh in Early Times: with Illustrations. By DAVID LAING, Esq., Secretary for Foreign Correspondence. (The Prefatory Notices continued. The Early Views, both North and South, of the City, . . . . .	223
Note of the Opening of a Group of Cists near Lauder. By the Right Hon. LORD ROSEHILL, F.S.A. Scot., . . . . .	223
The Ecclesiastical Antiquities of the District of Kintyre in Argyllshire. By Capt. T. P. WHITE, R.E., F.S.A. Scot. (of the Ordnance Survey), . . . . .	227
Notice of a Long Cairn, enclosing Two Parallel Rows of Cists, on the Cuff Hill, near Beith, Ayrshire; with Notes by Dr Speirs, of Beith, on the Human Remains found in it, and now Presented to the Museum. By R. W. COCHRANE PATRICK, of Ladyland, Esq., B.A., LL.B., F.S.A. Scot., . . . . .	231
Notice of a Compressed Skull and some Specimens of Ancient Pottery from Peru, Exhibited to the Society. By Colonel Sir J. E. ALEXANDER, K.C.L.S., F.S.A. Scot., . . . . .	233
Notice of some Peruvian Antiquities obtained from a Burial-Mound at Arica. (With Photographs.) By Rev. C. L. ACLAND, Folkestone, . . . . .	234
Remains of Early Antiquities, in and on the Borders of the Parish of Urquhart, Elgin, including Hut Circles, Kitchen Middens, Stone Cists with Urns, Stone Weapons, &c., &c. By the Rev. JAMES MORRISON, F.C., Urquhart, Elginshire. (Plate XXI.), . . . . .	250
Note on the supposed "Charter Chest of Johnny Faa" and its Contents—Probably the Official Box and Plates, with Trade Marks of the incorporation of Pewterers of Edinburgh. By JOHN ALEXANDER SMITH, M.D., V.P.S.A. Scot., . . . . .	264

	PAGE
Notice of the Contents of an Urn found at Murthly, Perthshire. By ARTHUR MITCHELL, M.D., Commissioner in Lunacy, Sec. S.A. Scot., . . . . .	268
Notice of Cists and Urns recently found at Ardoe, near Aberdeen. In a Letter to John Stuart, LL.D., Sec. By A. OGSTON, Esq. of Ardoe, . . . . .	269
Notices of Coins recently found in Scotland. By GEORGE SIM, Esq., F.S.A. Scot., Curator of Coins, . . . . .	271
Notices regarding the Antiquities of Cullen, in Banffshire—its Castle Hill, and Parish Church, &c. By ANDREW JERVISE, Esq., F.S.A. Scot., Brechin, . . . . .	274
Notes of some Recent Excavations in the Island of Unst, Shetland, and of the Collection of Stone Vessels, Implements, &c., thus obtained for the Society's Museum. By THOMAS EDMONSTON of Bunes, Esq., Unst, Shetland, . . . . .	283
Notice of a very Rare Type of the Half-Plack of James VI. By R. W. COCHRAN PATRICK, B.A. Edin., LL.B. Cantab., F.S.A. Scot., . . . . .	287
Notes on Ancient Pipe-Heads—"Elfin Pipes." By W. G. GIBSON, Esq. Communicated by JOHN STUART, Esq., LL.D., Secretary, . . . . .	288
Notice of an Ancient Structure near Glenalmond. By the Rev. J. HANNAH, D.D., Vicar of Brighton, F.S.A. Scot., . . . . .	291
Notice of the Excavation of the Brochs of Yarhouse, Brounaben, Old Stirkoke, Bowermadden, and Dunbeath, in Caithness; with Remarks on the Period of the Brochs; and an Appendix, containing a List of Brochs in Scotland, and Early Notices of many of them (with Plans, &c.) By JOSEPH ANDERSON, Corr. Mem. S.A. Scot., and now Keeper of the Museum, . . . . .	292
Notes on the Excavation of "Kenny's Cairn," on the Hill of Bruan; Carn Righ, near Yarhouse; the Warth Hill Cairn, Duncansbay; and several smaller Sepulchral Cairns in Caithness. By JOSEPH ANDERSON, Keeper of the Museum, . . . . .	292
Notice of the Discovery of Remains of the Elk ( <i>Cervus Alces</i> , Linn., <i>Alces Malchis</i> , Gray), in Berwickshire; with Notes of its occurrence in the British Islands, more particularly in Scotland, &c. By JOHN ALEXANDER SMITH, M.D., V.P.S.A. Scot., F.R.S.E., . . . . .	297
Note of the Remains of the Irish Elk ( <i>Megaceros Hibernicus</i> ), found in Scotland. By JOHN ALEXANDER SMITH, M.D., . . . . .	345

## PART II. 1871-72.

	PAGE
Anniversary Meeting and Election of Office-Bearers, . . . . .	351
Notices of Three Churches in North Uist, Benbecula, and Grimsay, said to have been built in the Fourteenth Century. (With Plans and Drawings.) By Captain F. W. L. THOMAS, R.N., F.S.A. Scot., . . . . .	368
Notes on the Crannogs and Lake Dwellings of Wigtownshire. By the Rev. GEORGE WILSON, Minister of the Free Church at Glenluce, . . . . .	368
Notes relating to Dunsinnane Hill. By the Rev. THOMAS BROWN, Minister of Collace. Communicated by ALEXANDER LAING, Esq., F.S.A. Scot., Newburgh, . . . . .	378
An Inquiry as to the Birthplace of St Patrick. By J. H. TURNER, M.A. Communicated by JOHN STUART, Esq., LL.D., Secretary, . . . . .	384
Notices of some Antiquities recently discovered in North Ayrshire. By R. W. COCHRANE PATRICK of Ladyland, Esq., B.A., LL.B., F.S.A. Scot. (Plate XXII.), . . . . .	385
Notice of Audun, an old Caledonian Fort on Benledi. By Colonel Sir JAMES EDWARD ALEXANDER, K.C.L.S., F.R.S.E., and F.S.A. Scot. (Sketches and Plan were exhibited), . . . . .	387
Notes of the Examination of a Crannog in the Black Loch, anciently called "Loch Inch-Cryndil," Wigtownshire. By CHARLES E. DALRYMPLE, Esq., F.S.A. Scot., . . . . .	388
Descriptive List of Antiquities near Loch Etive. By R. ANGUS SMITH, Ph.D., F.R.S., &c., Manchester. Part II. (Plates XXIII. and XXIV.), . . . . .	396
Notice of Himalayan and Kabyle Brooches, and the Mode of Wearing them. By WILLIAM SIMPSON, Esq., Lincoln's Inn Fields, London. (Specimens of the Brooches were exhibited.) (Plate XXV.), . . . . .	419
Notice of the Discovery of Eight Silver Rings or Ancient Wrist or Ankle Rings, in Cists near Rattar, Dunnet, Caithness. By Mr ROBERT CAMPBELL, of the Parochial School, Dunnet, . . . . .	422

	PAGE
Notice of Bronze Celts or Axe Heads, which have apparently been Tinned ; also of Bronze Weapons and Armlets, found along with portions of Metallic Tin near Elgin in 1868. By JOHN ALEXANDER SMITH, M.D., V.P.S.A. Scot. With Chemical Analysis, by Dr STEVENSON MACADAM, Lecturer on Chemistry, &c. (Plate XXVI.), . . . . .	428
Notice of the probable Author of the Unpublished History of Scotland, erroneously attributed to Bishop Elphinstone of Aberdeen. By WILLIAM F. SKENE, Esq., LL.D., F.S.A. Scot., . . . . .	447
Notice of a Cross-Shaft at Arthurlee, Renfrewshire. By T. ETHERINGTON COOKE, Esq., F.S.A. Scot. (Plate XXVII.), . . . . .	451
On the Discovery of a Kitchen-Midden on Inchkeith. By DAVID GRIEVE, Esq., F.S.A. Scot., . . . . .	452
Notice of an Underground Structure recently discovered on the Farm of Mickle Kinord, Aberdeenshire. By the Rev. J. G. MICHIE, M.A., Coldstone. Communicated by JOHN STUART, Esq., LL.D., Secretary. (Plate XXVIII.), . . . . .	455
Notice of a Runic Door from Iceland, ornamented with Carved Dragons and a scene representing the Slaying of a Dragon. With Engravings of the Door. By Professor GEORGE STEPHENS, F.S.A., Copenhagen, . . . . .	458
Notice of the Runic Ring recently found in Cramond Churchyard. By Professor GEORGE STEPHENS, F.S.A., Copenhagen, . . . . .	458
Notice of a Number of Circular Stone Huts, surrounded by a Thick Stone Wall, enclosing one and a half acres, called the Harefaulds, in Lauder Parish, Berwickshire. By DAVID MILNE HOME, LL.D., F.S.A. Scot. (Plate XXIX.), . . . . .	465
Notice of Two Pieces of Roman Sculpture found at Arniebog, Dumbartonshire, in June 1868. (With Photographs of the Sculptures.) By JOHN BUCHANAN, Esq., LL.D., Banker, Glasgow, . . . . .	472
Notice of the Fabric of St Vigeans Church, Forfarshire ; with Notice and Photographs of Early Sculptured Stones recently Discovered there, &c. By the Rev. WILLIAM DUKE, M.A., F.S.A. Scot. (Plates XXXI.-XXXIV.), . . . . .	481
Notice of a Collection of Flint Implements found in the neighbourhood of Fordun, Kincardineshire, now presented to the Museum. By the Rev. JAMES BRODIE, Monimail, . . . . .	499



	PAGE
Notice of a Highland Powder Horn, having on it the Monogram of Sir George Mackenzie; with some Remarks on Highland Costume. (The Horn, with others of various kinds, was exhibited.) By JAMES DRUMMOND, R.S.A., F.S.A. Scot.,	503
Notice of Permission given at Paris to John Acheson to make Dies with the Portrait of Mary Queen of Scots, 21st October 1553, and to Nicolas Emery to make a Die for Jettons, with the Arms, &c., of the Queen of Scots, from a Register preserved at Paris. By AUGUSTUS W. FRANKS, Esq., M.A., Dir. S.A., F.S.A. Scot.,	506
Notes of Coins recently found in various parts of Scotland. By GEORGE SIM, Esq., F.S.A. Scot., Curator of Coins,	508
Notices of some Iron Relics found in Carluke Parish. By W. R. RANKEN, Esq., Carluke,	512
Notes of Two Stone Cists at Carsecreugh, in the Parish of Old Luce, Wigtownshire. Communicated by the Rev. GEORGE WILSON, Free Church, Glenluce, Corr. Mem. S.A. Scot.,	517
Description by Ahmed Ibn-Fozlan (an eye-witness) of the Ceremonies attending the Incremation of the Dead Body of a Norse Chief, written in the early part of the Tenth Century. Translated from Holmboe's Danish Version of the Arabic Original, with Notes on the Origin of Cremation, and its Continuance. By JOSEPH ANDERSON, Keeper of the Museum,	518
Notice of a Silver Chain or Girdle, the property of Thomas Simson, of Blainlie, Esq., Berwickshire; another, in the possession of the University of Aberdeen; and of other Ancient Scottish Silver Chains. By JOHN ALEXANDER SMITH, M.D., V.P.S.A. Scot. (Plates XXXVII., XXXVIII.) (Postponed to next volume),	532
Notice of an Original Privy Seal Document relating to the Invasion of Scotland by King Henry the Seventh, in the year M.CCCC.XCVII. (The Document itself was exhibited.) By DAVID LAING, Esq., For. Sec. S.A. Scot. (Plate XXXV.),	540
Note of a curious Carved Bone Object found at Fortrie, Ellon, Aberdeenshire. By JOHN STUART, LL.D., Secretary. (Plate XXXVI.),	547
Results of Excavations at the Broch of Burrian, North Ronaldshay, during the Summers of 1870 and 1871. By WILLIAM TRAILL, M.D., of Woodwick, Esq., Corr. Mem. S.A. Scot.,	547
Notes (accompanied by Plans and Sketches) regarding the "Piets House" or Underground Chamber at Tealing, Forfarshire. By ANDREW JERVISE, Esq., F.S.A. Scot.,	548

	PAGE
Notes on the Evidence of Spinning and Weaving in the Brochs or Pictish Towers supplied by the Stone Whorls and the Long-handled "Broch Combs" found in them. By JOSEPH ANDERSON, Keeper of the Museum,	548
Notices of Major-General William Roy, from the Parish Registers of Carluke and other sources. By D. R. RANKEN, Esq., Carluke, . . . . .	562
Descriptive Catalogue of the Roman Consular and Family Coins (Denarii) in the Cabinets of the Museum of the Society. By GEORGE SIM, Esq., F.S.A. Scot., Curator of Coins, . . . . .	566
Note on a Bronze Patella, having an Anglo-Saxon Inscription on the Handle, found at Friar's Carse, Dumfriesshire. By RALPH CARR, of Hedgely, Esq., F.S.A. Scot., . . . . .	567
Inscribed Stones at Kirkmadrine, in the Parish of Stoneykirk, County of Wigtown. By ARTHUR MITCHELL, M.D., Commissioner in Lunacy, V.P.S.A. Scot. (Plates XXXIX. and XL.), . . . . .	568
Notes on the Ancient Cattle of Scotland:—I. The Small Short-horned Ox, <i>Bos Longifrons</i> , Owen; II. The Great Long-horned Ox, the Urus, <i>Bos Primigenius</i> , Bojanus and Owen. By JOHN ALEXANDER SMITH, M.D., V.P.S.A. Scot. (Plate XLI.), . . . . .	587
Additional Note to Communication on "The Antiquities of Cullen in Banffshire" (see page 274). By ANDREW JERVISE, Esq., F.S.A. Scot., . . . . .	674

# LIST OF ILLUSTRATIONS.

\* On Separate Leaves.

	PAGE
Roman Oculist's Stamp found at Tranent, . . . . .	7
* Ground-plans of Castle on Ben Ledi and the Kier of Gargunnoch, and View of the Kier of Gargunnoch, Plate I., . . . . .	35
* Section of Castle on Ben Ledi and View of Walls. Plate II., . . . . .	37
* Castle Law and Dunmyot. Plate III., . . . . .	40
Eye-Sketch of Shell-Heap at Inveravon, . . . . .	49
* Sculptured Stones from Monifieth, Forfarshire. Plate IV., . . . . .	73
* Symbols of the Sculptured Stones of Scotland. Plate V., . . . . .	74
* Symbols of the Sculptured Stones of Scotland. Plate VI., . . . . .	75
Additional Figures or Symbols on the Sculptured Stones of Scotland, . . . . .	77
* Dun Mac Uisneachan and Dun Bhaile-an-Righ. Plate VII., . . . . .	83
* Lake Dwelling on Ledaig and Cairn at Achnacree. Plate VIII., . . . . .	93
* Cromlechs at Achnacreebeg and Baron's Cairn, Connel Ferry. Plate IX., . . . . .	99
* Urn from a Cave on Dun Valanree, and View of Dun Cathich, on Loch Etive. Plate X. . . . .	103
* Stone Circle at Lochnell, and Double Circles at Balcardine. Plate XI., . . . . .	104
* Standing Stone of Clach Diarmid and Megalithic Burying-Place at Lochnell. Plate XII., . . . . .	105
Ancient Feeding-Bottles for Infants, . . . . .	107
Double-margined Comb of Bone, with Iron Rivets, . . . . .	130
Bone Implement, probably a Long-handled Comb, with the teeth uncut, found at Keiss, Caithness, . . . . .	132
* Long-handled Combs, Scottish. Plate XIII., . . . . .	150
* Long-handled Combs, Scottish, and one English. Plate XIV., . . . . .	150
* Long-handled Combs, Scottish, and two English. Plate XV., . . . . .	150
* Long-handled Broch, Eskimo and Roman Camp Combs. Plate XVI. . . . .	150
* Swiss, Danish, and Indian and Eskimo Combs. Plate XVII., . . . . .	150
* Long-handled and other Combs, and Diagrams of their Teeth, &c. Plate XVIII., . . . . .	150
The Canongate Tolbooth, Edinburgh, . . . . .	165

	PAGE
Polished Celts, found at Drumour, Glenshee, Forfarshire, . . . . .	174
Clay Cones (Loom Weights), found at Ravensby, Barrie, Forfarshire, . . . . .	175
Clay Cones (Loom Weights), found at Montblairy, Banffshire, . . . . .	176
Cast of Sculptured Stone, with Spectacle Ornament, found at Bilton, Yorkshire, . . . . .	177
Roman Sculptured Legionary Tablet found at Cumbernauld, . . . . .	178
Wooden Shield found in Blair-Drummond Moss, . . . . .	187
* Highland Target, with Cognisance of the Lord of the Isles, the property of James Drummond, R.S.A. Plate XIX., . . . . .	188
Small Cup-shaped Urn found at Wester Buckleyvie, Fife, . . . . .	190
Small Cup-shaped Urn, in the Museum, locality unknown, . . . . .	193
Small Cup-shaped Urn found at Benachie, . . . . .	193
Small Cup-shaped Urns found at Old Pendrith, in S. Ronaldsay, Orkney, and at Dunbar, . . . . .	195
Small Cup-shaped Urn found in a Cairn on the Hill of Benachie, . . . . .	196
Small Cup-shaped Urn, pierced with openings, found at Killucken, Tyrone, Ireland, . . . . .	197
Small Cup-shaped Vessel, probably of recent manufacture in the Hebrides, Food Vessel (?) with Spoon (?) of Horn, found in a Cist at Inverurie, Aberdeenshire, . . . . .	200
Crogans, or Hand-made Vessels of Baked Clay, from the Hebrides, . . . . .	205
* Ground-Plan of Lindores Abbey. Plate XX., . . . . .	210
Ground-Plan of Broch at Levenwick, Shetland, . . . . .	214
Ground-Plan of Cists at Lauder, . . . . .	225
Flint Knife found in the parish of Urquhart, Elginshire, . . . . .	239, 260
Flint Knife found at Strachur, Argyllshire, . . . . .	239
Flint Arrow-heads found at Urquhart, Elginshire, . . . . .	240, 262
Inscribed Bronze Brooch, found with human bones in the Broch of Yarhouse, Caithness, . . . . .	244
Arrow-head of Black Flint, and Hammer of Grey Gneiss, found in the chamber of the Horned Cairn at Ormiegill, Ulbster, Caithness, . . . . .	245
Beads of Lignite found in a Cist in the chamber of the Horned Long Cairn at Yarhouse, Caithness, . . . . .	246
Leaf-shaped Arrow-head of Flint found in the Horned Cairn of Get, Garry-whin, Caithness, . . . . .	246
Bronze Pin found in the Broch of Bowermadden, Caithness, . . . . .	247
Flint Celt found in Urquhart, Elginshire, . . . . .	258
* Ornamented Stone Hammers found in Urquhart, Elginshire, and at Corwen, Merionethshire. Plate XXI., . . . . .	259
Pewterer's old Die-stamp, . . . . .	267
Bone Object (Button ?) found in the Murthly Urn, . . . . .	269
Skull of Elk ( <i>Cervus alces</i> ) found in Whitrig Bog, Berwickshire, . . . . .	300

	PAGE
Teeth of Elk found in Whitrig Bog, . . . . .	304
Painting in Oil of an Elk's Skull found in Forfarshire, . . . . .	316
Skull of Elk found at Airleywright, Perthshire, . . . . .	319
Skull of Elk found at Airleywright, Perthshire, from left side, . . . . .	320
Horn of Elk found in Strath Halladale, Sutherlandshire, . . . . .	323
Skull of Elk found at Williestruther Loch, Roxburghshire, . . . . .	327
Celt of Greenstone found near Glenluce, . . . . .	356
Implement of Deer's Horn found in the Broch of Lingrow, . . . . .	358
Quartz Pebbles with central depressions from Lingrow and Kintradwell Brochs, . . . . .	358
Clay Mould found at the Broch of Lingrow, . . . . .	359
Bronze Pin found in the Broch of Bowermadden, Caithness, . . . . .	359
Ground Plan of Structure near How of Hoxay, Orkney, . . . . .	363
Plan of Machermore Loch, . . . . .	370
Section of the Hill Fort of Dunsinnane, . . . . .	380
* Stone Hammers found in Ayrshire. Plate XXII., . . . . .	387
* Plan and Section of Chambered Cairn at Ach-na-cree, Argyllshire. Plate XXIII., . . . . .	413
* Urns found in the Cairn at Ach-na-cree. Plate XXIV., . . . . .	413
* Woman of Bussahir in the Himalayas wearing dress of a single piece fastened with large brooch. Plate XXV., . . . . .	420
Silver Armlet found in a Cist at Burn of Rattar, Dunnet, Caithness, . . . . .	422
Bronze Flat Celt, tinned, found at Sluie, Morayshire, . . . . .	431
Portions of Metallic Tin found at Achtertyre, Morayshire, . . . . .	435
* Spear Head and Armlet of Bronze found at Achtertyre, Elginshire, and Armlet of Bronze found at Benachie, Aberdeenshire. Plate XXVI., . . . . .	437
* Cross-Shaft found at Arthurlee, Renfrewshire. Plate XXVII., . . . . .	452
* Plan of Underground Structure on the Farm of Mickle Kinord, Aberdeen- shire. Plate XXVIII., . . . . .	457
Runic Ring found at Cramond, . . . . .	458
Polished Stone Celt found at Ervie, near Glenluce, showing discoloured mark of handle, . . . . .	460
* Stone Moulds found at Timpandean, Jedburgh, and at Swinnie, Jedburgh. Plate XXX., . . . . .	463
* Plan of the Harefaulds, Lauder, and view of one of the huts. Plate XXIX., . . . . .	466
Roman Legionary Tablet found at Arniebog, Cumbernauld, . . . . .	476
Sculptured Stones recently discovered at St Vigean. Plate XXXI., . . . . .	498
Sculptured Stones recently discovered at St Vigean. Plate XXXII., . . . . .	498
Sculptured Stones recently discovered at St Vigean. Plate XXXIII., . . . . .	498
Sculptured Stones recently discovered at St Vigean. Plate XXXIV., . . . . .	498
Bronze Pin from the island of Tiree, . . . . .	533



	PAGE
Engraved Highland Powder Horn, . . . . .	534
Inscribed Silver Brooch, . . . . .	535
Inscribed Bronze Brooch, . . . . .	536
Polished Stone Object found in Mull, . . . . .	537
Ring of Shale found near Yarrow Kirk, Selkirkshire, . . . . .	538
* Portrait of King Henry VII. Plate XXXV., . . . . .	540
Signature of King Henry VII., . . . . .	542
* Carved Bone Object found at Fortrie, Ellon. Plate XXXVI., . . . . .	547
Ornamented Stone Whorl for the Distaff found near Roslin, . . . . .	548
Spindle with its Whorl in position, . . . . .	549
Mirror and Comb from the Maiden Stone, Garioch, . . . . .	550
Long-Handled Comb from the Broch of Burrian, Orkney, . . . . .	550
Combs of Bone with iron rivets found with Long-handed Combs in the Broch of Burrian, . . . . .	551
Clay Loom Weights found at Ravensby, Barry, Forfarshire, . . . . .	557
Clay Loom Weights found at Montblair, Banffshire, . . . . .	558
Comb with iron teeth used by Hindoo weavers, . . . . .	559
Rubbing-Bone, made of the bone of a whale, from Burrian, . . . . .	561
Sculptured Stone built into the wall of the Graveyard at Kirkmadrine, . . . . .	570
Inscribed Stone at Whithorn, . . . . .	578
Dedication Crosses, Elgin Cathedral, . . . . .	579
Dedication Cross, Pluscarden Abbey, . . . . .	580
Dedication Cross, Parish Church of Crail, . . . . .	580
Stone built into the wall of the Mill at Drumore, . . . . .	582
Sketch Plan of the Chapel Co' of St Medan, . . . . .	583
Elevation of Wall in Chapel Co' of St Medan, . . . . .	585
Iron Spear-Head found with Human Skeleton at Newstead, Roxburghshire, . . . . .	590
Human Skull found at Newstead, Roxburghshire, . . . . .	590
* Skulls of <i>Bos longifrons</i> found at Newstead (contributed by Dr John Alex- ander Smith), . . . . .	594
White Cattle of Hamilton, . . . . .	603
Side View of Skull of White Ox from Hamilton, . . . . .	612
Skull of White Ox from Hamilton, . . . . .	614
Maxillary Molars of right side of Small Short-Horned Ox, <i>Bos longifrons</i> , Owen, found at Newstead, Roxburghshire, . . . . .	619
Portions of Skull of Small Short-Horned Ox, with Horns, found in a bog, County Limerick, Ireland, . . . . .	622
Sketch of improved Kyloe or Highland Cattle, . . . . .	640
Types of Bronze Axe-Heads, . . . . .	646
Skull of <i>Bos primigenius</i> found in Fifeshire, . . . . .	650
Side View of Skull of <i>Bos primigenius</i> found in Fifeshire, . . . . .	651
Two Last Maxillary Molar Teeth of left side of Urus, <i>Bos primigenius</i> , . . . . .	651

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NOVEMBER 30, 1871.

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 1846. \*PATON, JOSEPH NEIL, Dunfermline.  
 1859. PATON, Sir JOSEPH NOEL, Knt., R.S.A., 33 George Square.  
 1869. PATON, WALLER HUGH, R.S.A., 14 George Square.  
 1870. \*PATRICK, R. W. COCHRANE, LL.B. Oxon., Woodside, Beith, Ayrshire.  
 1871. PAUL, GEORGE M., W.S., 16 St Andrew Square.  
 1862. PEDDIE, JOHN DICK, Architect, 3 South Charlotte Street.  
 1855. \*PENDER, JOHN, of Minard, M.P., Mount Street, Manchester.  
 1860. PIERSON, JAMES ALEX., of the Guynd, Forfarshire.  
 1872. POLLOCK, HUGH, Donnybrook House, Cork.  
 1872. PRENTICE, EDWARD ALEXANDER, 77 George Street.  
 1860. PRIMROSE, Hon. BOUVERIE F., 22 Moray Place.
1865. RAINY, ROBERT, D.D., Professor of Theology, New College, Edinburgh.

1864. \*RAMSAY, Major JOHN, of Straloch and Barra, Aberdeenshire.  
 1860. REID, JAMES, Secretary, Commercial Bank of Scotland.  
 1866. REID, WILLIAM, W.S., 42 Frederick Street.  
 1849. \*RHIND, DAVID, Architect, 54 Great King Street.  
 1861. ROBERTSON, ANDREW, M.D., Indego, Tarland, Aberdeenshire.  
 1856. ROBERTSON, GEORGE B., W.S., General Register House.  
 1859. ROBERTSON, Colonel JAMES A., 118 Princes Street.  
 1862. ROBERTSON, JOHN, S.S.C., Portobello.  
 1865. ROBINSON, JOHN RYLEY, LL.D., Dewsbury.  
 1871. RODGER, JOHN F., 1 Royal Circus.  
 1854. ROGER, JAMES C., 13 New Inn, London.  
 1850. \*ROGERS, Rev. CHARLES, LL.D., Lewisham, Kent.  
 1871. ROLLO, Right Hon. Lord, Duncrub House, Dunning.  
 1872. \*ROSEBERRY, Right Hon. The Earl of.  
 1867. ROSEHILL, The Lord, Easter Warriston.  
 1869. ROSSLYN, Right Hon. The Earl of.  
 1867. ROSS, Rev. WILLIAM, Rothesay.
1848. \*SETON, GEORGE, Advocate, 42 Greenhill Gardens.  
 1872. SHAIRP, JOHN C., LL.D., Principal of the United College, St Andrews.  
 1869. \*SHAND, Hon. Lord, 3 Great Stuart Street.  
 1864. SHAND, ROBERT, Teacher, 45 Mill Street, Perth.  
 1849. \*SHIEL, WILLIAM, Assistant Clerk of Session, General Register House.  
 1860. SIM, GEORGE, 9 Lauriston Lane,—*Curator of Coins*.  
 1865. SIM, WILLIAM, of Lunan Bank, St Bernard's Crescent.  
 1871. \*SIMPSON, ALEX. R., Professor of Midwifery, University of Edinburgh,  
     52 Queen Street.  
 1864. SIMPSON, Rev. ADAM L., Friars' Gate, Derby.  
 1870. SIMPSON, GEORGE BUCHAN, Seafield, Broughty-Ferry.  
 1864. SIMSON, GEORGE W., Artist, 54 Frederick Street.  
 1857. SINCLAIR, ALEXANDER, 133 George Street.  
 1833. \*SKENE, WILLIAM FORBES, W.S., Inverleith Row.  
 1870. SMALL, DAVID, Solicitor, Gray House, Dundee.  
 1844. \*SMITH, DAVID, W.S., 64 Princes Street.  
 1847. \*SMITH, JOHN ALEX., M.D., 7 West Maitland Street,—*Vice-President*.  
 1858. SMITH, ROBERT M., Bellevue Crescent.

1867. SMITH, WILLIAM, Junior, Alma House, Morley, near Leeds.  
 1866. SMYTHE, WILLIAM, of Methven, Perthshire.  
 1855. SNODY, ANDREW, S.S.C., Gayfield Square.  
 1864. SOUTAR, WILLIAM SHAW, Banker, Blairgowrie.  
 1872. \*STAIR, Right. Hon. The Earl of, K.T.  
 1858. STARKE, JAMES, Advocate, Traquair-holme, Dumfries.  
 1872. STEEL, NIEL, Merchant, Dundee.  
 1872. \*STEVENSON, ALEXANDER SHANNAN, Tynemouth.  
 1867. \*STEVENSON, JOHN J., Architect, 3 Bayswater Hill, London.  
 1855. STEVENSON, THOMAS, Civil Engineer, 17 Heriot Row.  
 1847. \*STEVENSON, WILLIAM, D.D., 37 Royal Terrace.  
 1867. \*STEWART, Captain CHARLES, R.A., The West Hall, High Leigh, Cheshire.  
 1848. \*STEWART, HOPE J., Clearburn House, Prestonfield.  
 1871. \*STEWART, Major J. M. SHAW, R.E.  
 1867. \*STRATHMORE, Right Hon. The Earl of, Glamis Castle, Forfarshire.  
 1850. \*STRUTHERS, Rev. JOHN, Minister of Prestonpans.  
 1853. STUART, JOHN, LL.D., General Register House,—*Secretary*.  
 1845. \*STUART, Right Hon. Sir JOHN, Loch Carron, Ross-shire.  
 1867. \*SUTHERLAND, His Grace the Duke of, Dunrobin Castle, Sutherlandshire.  
 1851. \*SWINTON, ARCHIBALD CAMPBELL, of Kimmerghame, Advocate.  
 1863. SWITHINBANK, GEORGE E., LL.D., Newcastle.
1860. TAYLOR, JAMES, Starley Hall, Burntisland.  
 1870. TEESDALE, Rev. FREDERICK D., 12 Abbotsford Crescent.  
 1870. \*TENNANT, CHARLES, of The Glen, Innerleithen.  
 1870. THOMAS, Captain F. W. L., R.N., Rosepark, Trinity.  
 1872. THOMSON, CHARLES WYVILLE, LL.D., Regius Professor of Natural History, University of Edinburgh.  
 1867. THOMSON, LOCKHART, S.S.C., Coates Crescent.  
 1847. \*THOMSON, THOMAS, W.S., 1 Thistle Court.  
 1862. \*TREVELYAN, Sir WALTER C., Bart., Wallington, Northumberland.  
 1865. TROUP, WILLIAM, Hartville, Bridge-of-Allan.  
 1867. TULLIS, WILLIAM, Markinch, Fifeshire.  
 1869. \*TURNBULL, JOHN, of Abbey St Bathans, W.S., 49 George Square.  
 1865. TURNER, WILLIAM, M.B., Professor of Anatomy, University of Edinburgh.

1866. TWEDDELL, GEORGE M., Stokesley, Yorkshire.
1862. \*VEITCH, GEORGE SETON, Bank of Scotland.
1859. \*WALKER, FOUNTAINE, Ness Castle, Inverness-shire.
1871. \*WALKER, PETER GEDDES, 2 Airlie Place, Dundee.
1848. \*WALKER, WILLIAM, F.R.C.S.E., 47 Northumberland Street.
1861. WALKER, WILLIAM STUART, of Bowland.
1872. WARDEN, ALEXANDER JOHNSTON, Marybank House, Broughty-Ferry.
1849. \*WARE, TITUS HIBBERT, 20 Derby Road, Southport, Lancashire.
1867. WATSON, REV. WILLIAM RANKEN, Manse, Logie, Fifeshire.
1871. \*WATT, ARCHIBALD A., 7 Airlie Place, Dundee.
1856. WEBSTER, JOHN, Advocate, 42 King Street, Aberdeen.
1872. \*WEMYSS and MARCH, Right. Hon. The Earl of.
1870. WHITE, JOHN, of Drumelzier and Netherurd, Noblehouse.
1869. WHITE, Captain T. P., R.E., Ordnance Survey.
1867. WHYTE, ROBERT, Procurator-Fiscal, Forfar.
1870. \*WHYTOCK, ALEXANDER, George Street.
1871. WILLIAMS, WILLIAM EDWARD, Architect, 8 Amhurst Villas, The Downs, Hackney.
1871. WILSON, ANDREW, S.S.C., 4 York Place.
1872. WILSON, GEORGE, S.S.C., 14 Hill Street.
1860. WILSON, WILLIAM THORBURN, Burnside, Rutherglen.
1870. WILSON, CHARLES E., LL.D., H.M. Inspector of Schools, 2 Kew Terrace, Glasgow.
1861. \*WILSON, WILLIAM, of Banknock, Stirlingshire.
1870. WINGATE, JAMES, Linnhouse, Hamilton.
1852. \*WISE, THOMAS A., M.D., Rostillan Castle, Cork, Ireland.
1863. WISHART, EDWARD, 22 Baltic Street, Leith.
1867. WRIGHT, ROBERT, D.D., Manse, Dalkeith.
1864. WRONGHAM, WILLIAM, Agent, Dundee.
1871. WYLIE, ANDREW, Esq., Prinlaws, Leslie, Fife.
1866. YOUNG, JAMES, M.D., 36 Castle Street.
1866. YOUNG, ROBERT, Writer, Elgin.
1867. YULE, JOHN, Newburgh, Fife.



LIST OF HONORARY MEMBERS  
OF THE  
SOCIETY OF ANTIQUARIES OF SCOTLAND,  
JUNE 30, 1872.

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[According to the *Laws*, the Number is Limited to TWENTY-FIVE.]

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1849.

Right Hon. Sir WILLIAM GIBSON CRAIG of Riccarton, Bart., Lord Clerk  
Register.

1851.

Right Hon. The EARL STANHOPE, D.C.L., President of the Society of Anti-  
quaries, London.

1853.

DANIEL WILSON, LL.D., Professor of English Literature, Toronto, Canada.

1855.

Major-General Sir HENRY C. RAWLINSON, K.C.B., D.C.L., London.

1857.

5 WILLIAM REEVES, D.D., Lusk, Dublin.

1860.

Right Hon. LORD TALBOT DE MALAHIDE.

Dr RICHARD LEPSIUS, Berlin.

The Chevalier G. H. PERTZ, LL.D., Royal Library, Berlin.

1861.

JAMES FARRER of Ingleborough, Yorkshire.

1862.

- 10 His ROYAL HIGHNESS ALBERT EDWARD, PRINCE OF WALES.  
 Dr FERDINAND KELLER, Zurich.  
 The PRINCE LOUIS LUCIEN BONAPARTE.

1864.

- Right Hon. JOHN LORD ROMILLY, Master of the Rolls.  
 Sir THOMAS DUFFUS HARDY, Deputy-Keeper of Her Majesty's Public  
 Records, London.  
 15 ALEXANDER J. BERESFORD HOPE, Esq., M.P., London.

1865.

Sir HENRY DRYDEN, Bart., Canons Ashby, Northamptonshire.

1868.

THOMAS CARLYLE, Esq., Cheyne Row, Chelsea.  
 ALBERT WAY, Esq., of Wonham Manor, Reigate.

1869.

- JOHN HENRY PARKER, Esq., Oxford.  
 20 M. FRANCISQUE MICHEL, Paris.

1871.

GEORGE STEPHENS, Esq., Professor of the English Language and Literature,  
 University of Copenhagen.

# PROCEEDINGS

OF THE

## SOCIETY OF ANTIQUARIES OF SCOTLAND.

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NINETY-FIRST SESSION, 1870-71.

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ANNIVERSARY MEETING, *St Andrew's Day*, 30th November 1870.

FRANCIS ABBOTT, Esq., Vice-President, in the Chair.

The Office-bearers of the Society for the ensuing Session were elected as follows :—

*Patron.*

HER MAJESTY THE QUEEN.

*President.*

THE DUKE OF BUCCLEUCH AND QUEENSBERRY, K.G.

*Vice-Presidents.*

DAVID MILNE HOME, Esq., LL.D.

FRANCIS ABBOTT, Esq.

JOHN ALEXANDER SMITH M.D.

*Councillors.*

Right Hon. EARL of DALHOUSIE, K.T.	} <i>Representing the</i>
JAMES T. GIBSON CRAIG, Esq.	
SIR J. NOEL PATON, Knt., R.S.A.	
PROFESSOR WILLIAM TURNER, M.B.	
JAMES D. MARWICK, Esq.	
HON. LORD NEAVES.	
HON. LORD ROSEHILL.	
BARRON GRAHAM, Esq.	
Captain T. P. WHITE, R.E.	

*Secretaries.*

JOHN STUART, Esq., LL.D., General Register House.  
 ARTHUR MITCHELL, M.D., Commissioner in Lunacy.  
 DAVID LAING, Esq., LL.D., *for Foreign Correspondence.*

*Treasurer.*

THOMAS B. JOHNSTON, Esq., 4 St Andrew Square.

*Curators of the Museum.*

JAMES DRUMMOND, Esq., R.S.A.  
 ROBERT CARFRAE, Esq.

*Curator of Coins.*

GEORGE SIM, Esq.

*Librarian.*

DAVID DOUGLAS, Esq.

*Auditors.*

ROBERT HUTCHISON, Esq.  
 JOHN MACMILLAN, Esq., A.M.

*Publishers.*

MESSRS EDMONSTON & DOUGLAS.

*Keeper of the Museum.*

JOSEPH ANDERSON.

*Assistant Keeper of the Museum.*

GEORGE HASTIE.

The following is a list of Members deceased during the past year.

*Honorary Member.*

When Elected.

BENJAMIN THORPE, Esq., Editor of the "Codex Exoniensis," "Anglo-Saxon Chronicle," "Analecta Anglo-Saxonica," &c., . . . . .	1865
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*Fellows of the Society.*

ALEXANDER AUCHIE, Esq., Ann Street, . . . . .	1861
WILLIAM HENRY BROWN, of Ashley, Esq., Ratho, . . . . .	1841
PETER CHALMERS, D.D., Abbey Church, Dunfermline. Author of "Historical and Statistical Account of Dunfermline, 2 vols., 1844, 1859," . . . . .	1844
JOHN HAMILTON, Esq., Writer to the Signet, George Street, . . . . .	1850
WILLIAM ALEXANDER LAURIE, Esq., Writer to the Signet, Rossend Castle, Fife, . . . . .	1838
The Most Hon. WILLIAM S. R. MARQUIS OF LOTHIAN, &c., . . . . .	1860
GEORGE HUNTER MARSHALL, Esq., Heriot Row, . . . . .	1849
ROBERT NAYSMITH, Esq., F.R.C.S.E., Charlotte Square, . . . . .	1838
WILLIAM PAGAN, Esq., Writer and Banker, Cupar-Fife, . . . . .	1861
Sir JAMES YOUNG SIMPSON, Bart., M.D., D.C.L., F.R.C.P.E., &c., Professor of Midwifery, University of Edinburgh, . . . . .	1849

A ballot having been taken, the following Gentlemen were duly admitted Fellows of the Society :—

Rev. THOMAS LEISHMAN, Minister of Linton, Roxburghshire.  
 ALEXANDER MAXWELL, Esq, Merchant, Dundee.  
 THOMAS LESLIE MELVILLE CARTWRIGHT of Melville, Esq., Fife.  
 ANDREW WILSON, Esq., S.S.C., Edinburgh.

The Secretary read the Annual Report approved by the Council, and submitted to the present meeting before being laid as usual before the Board of Trustees for transmission to the Right Honourable the Lords of Her Majesty's Treasury.

ANNUAL REPORT of the Society of Antiquaries of Scotland for the year ending 30th September 1870.

During the past year the Museum has been open continuously, except during the month of November, when it was closed to the public as usual for cleaning and re-arrangement.

The following table shows the number of visitors for each of the eleven months during which it was open to the public, distinguishing between day visitors and visitors on the Saturday evenings :—

1869-70.	Day Visitors.	Saturday Evenings.	Total.
October, . . . . .	5,087	1,191	6,278
December, . . . . .	6,214	1,098	7,312
January, . . . . .	15,537	1,275	16,812
February, . . . . .	3,904	1,016	4,920
March, . . . . .	3,933	1,026	4,959
April, . . . . .	4,139	1,160	5,299
May, . . . . .	5,663	876	6,539
June, . . . . .	7,322	565	7,887
July, . . . . .	17,573	1,559	19,132
August, . . . . .	18,353	2,017	20,370
September, . . . . .	9,638	1,696	11,334
Total, . . . . .	97,363	13,479	110,842
Previous year, 1868-69, . . .	89,233	8,672	97,905
Increase 1869-70 over 1868-69,	8,130	4,807	12,937

During the year 262 articles of antiquity and 45 books and pamphlets have been added to the Museum and Library by donation, and 17 articles of antiquity by purchase.

These numbers are exclusive of the following collections which have also been presented during the year, viz.:—A large collection resulting from the excavation of an ancient settlement on an isolated rock near Seacliff, East Lothian, presented by J. W. LAIDLAY, Esq., of Seacliff, F.S.A., Scot.; A collection of Egyptian Antiquities, and a collection of



Antiquities from Orkney, presented by the Executors of the late Professor T. S. TRAILL, M.D., through the Rev. J. R. Omond, F.S.A., Scot.; A collection of Antiquities bequeathed by the late Rev. PETER CHALMERS, D.D., Minister of Dunfermline, F.S.A., Scot.; Four Sculptured Stones, presented by the Heritors and Minister of the Parish of Monifieth, Forfarshire, through JAMES NEISH, Esq., F.S.A., Scot.; and the collection of Antiquities of the late Professor Sir JAMES Y. SIMPSON, presented by Sir Walter Simpson, Bart.

A number of interesting and valuable articles of antiquity have also been placed in the Museum on deposit for exhibition during the year.

In consequence of the constantly increasing number of specimens for which room has to be made, considerable re-arrangement of the Museum has been rendered necessary; and in order to provide additional space, an upright case for Manuscripts, &c., has been obtained.

The last impression of the Catalogue having been sold out, a new one, with the necessary additions, has been printed. The Catalogue of the Library is in process of completion.

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MONDAY, 12th December 1870.

ARTHUR MITCHELL, Esq., M.D., SEC. S.A. SCOT., in the Chair.

A ballot having been taken, the following Gentlemen were elected Fellows of the Society:—

JAMES AULDJO JAMIESON, Esq., W.S., Edinburgh.

KENNETH MURRAY, of Genies, Esq., Ross-shire.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors:—

(1.) By Sir WALTER SIMPSON, Bart.

The collection of Antiquities belonging to the late Professor Sir James Young Simpson, comprising:—

A Fragment of a finely sculptured slab of Alabaster, bearing in alto-relievo the heads of two horses and the upper portions of three human figures. It is a portion of the upper part of the front half of a slab bear-

ing the same composition as that represented in the plate at page 356 of Layard's *Nineveh*, vol. ii., entitled "Assyrian Chariot of the later period from the S.W. ruins Nimroud." The fragment measures  $3\frac{1}{2}$  feet in length and nearly 2 feet in breadth, and is mounted in a frame.

Fragment of similar Assyrian Sculpture about a foot square, with two human heads in relief, and below, a fragment of a cuneiform inscription enclosed in frame.

Portion of a Marble Slab about 4 inches square, displaying in high relief the upper part of the head and face of a human figure, with conical cap and horn-like excrescence apparently rising from the forehead.

Portion of a Marble Slab, 6 inches in length by 4 inches in breadth, displaying in high relief the head and shoulders of a young human figure undraped.

Portion of a Sculptured Hand from the Temple at Karnak.

Portion of a square Stone, with slightly rounded moulding, inscribed on three sides with incised hieroglyphics, and having on the top part a hand holding a dagger-like instrument carved in relief, beside an incised cartouche, from the Temple at Karnak.

Portion of a similar squared Stone, with incised hieroglyphics from Karnak.

Head of a Human Figure with high conical cap, in black limestone, also from the Temple of Karnak.

Piece of white Sandstone, 12 inches long, from the Temple of Philæ, Upper Egypt, containing a portion of a cartouche.

Three small oval Scarabei of clay.

One small emblem of Deity (Egyptian).

Patella of yellowish Earthenware, 8 inches diameter and  $1\frac{3}{4}$  inch in depth, having a handle 5 inches long, from an Etruscan tomb at Cumæ.

Three Roman or Etruscan Lamps, one circular and having two nozzles. The others elongated and bearing marks of use at the nozzle.

Two small globular Vessels of Earthenware, with short spouts, of the kind called "tetinæ," or infants' feeding bottles.

A Cylinder of Earthenware, 2 inches in diameter and 4 inches long, having a tapering nozzle at one end pierced with a small hole. The form of the object is not unlike that of a syringe, but the inside of the cylinder is spirally indented and irregular.

A Globular Bottle of Earthenware having the neck broken off.

Etruscan Vase of reddish ware,  $7\frac{1}{2}$  inches in height, with narrow neck and looped handle. It is ornamented with two broad belts of lines crossing each other at right angles, with floriated ornaments between.

Small Patella of red earthenware (imperfect),  $3\frac{1}{2}$  inches in diameter and three-quarters of an inch in depth, having a looped handle at one side. It is ornamented on the outside with rudely painted human figures.

Cup of Samian-like ware,  $4\frac{1}{2}$  inches in diameter, unornamented.

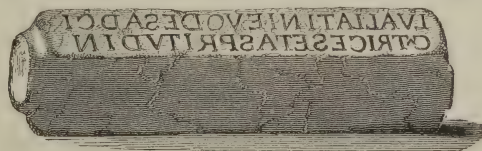
Portion of a Patella-shaped Vessel in marble.

A Bronze Lamp, 3 inches in height, and  $7\frac{1}{2}$  inches in length from handle to tip of nozzle. The upper part is ornamented with figures in relief.

Slab of Marble, 9 inches square (in frame), bearing the inscription—

D            M  
C · ACILIOBASSO  
MEDIC · DVPLIC  
COLLEGAE EIVS

Collection of casts of Roman Medicine Stamps, some of which are described in the “Monthly Medical Journal” for 1851, pp. 39 *et seq.*, in a paper entitled “Notices of Ancient Roman Medicine Stamps, &c., found in Great Britain. By J. Y. Simpson, M.D., Professor of Midwifery in the University of Edinburgh.” One of the stamps described was found at Tranent in East Lothian, and is preserved in the Society’s Museum, having been bequeathed by the late E. W. A. Drummond Hay in 1846. It is inscribed on one side, as shown in the accompanying woodcut:—



Roman Oculist's Stamp found at Tranent. (Actual size.)

This inscription has been read as follows:—

Lucii Vallatini evodes ad cicatrices et asperitudines.

The evodes of Lucius Vallatinus for cicatrices and granulations.

On the other side the inscription is—

L.VALLATINIAPALOCRO-  
CODESADDIATHESIS

Lucii Vallatini Apalocrocodes ad Diathesis.

The mild crocodes of L. Vallatinus for affections (of the eyes).

The casts or facsimiles are :—

Facsimile in wood of a quadrilateral stamp, about 2 inches square and one-fourth of an inch thick, found at Kenchester, Herefordshire. It is inscribed on four sides as follows :—

1. F. VINDAC. ARIO  
VISTIANICET.
2. FVINDACIAR  
OVISTNARD
3. VINDACARI  
OVISTICHLORON
4. T. VINDAC. ARIO  
VISTI . . . . . N

These are translated by Professor Simpson in the paper before referred to as follows :—

1. The Anicetum or infallible Collyrium of F. Vindacius Ariovistus.
2. The Nardinum or Spikenard Collyrium of F. Vindacius Ariovistus.
3. The Chloron or green Collyrium of F. Vindax Ariovistus.

On one of the flat sides of this stamp the word SENIOR is engraved, and on the other side SENI.

Casts in plaster of four inscriptions not enumerated in the paper above mentioned. They are about 2 inches long, and read as follows :—

- (1.) LIVNIPHILINIDIAM  
ISVSADDIADIATHETO
- (2.) LIVNIPHILINIDIAPSO  
RICVMADGENISCISTECL

(3.) LIVNIPHILINISTAC  
TVMOPOBADCLARIT

(4.) LIVNIPHILINIDIALE  
PIDOSADASPRETCICAT

Casts of two small inscriptions about an inch in length, reading PSORI and STACT.

Casts of four inscriptions, 2 inches in length, reading

(1.) NATALINIVICT  
CRINIHERBACI

(2.) NATALINIVICTORI  
NIDIAMISVSAD—

(3.) NATALINIVIC—  
ORNILENENDM

(4.) NATALINIVICTO  
RINITALASSE

A Burmese Idol in marble, 12 inches in height.

A double Jug of coarse reddish earthenware, consisting of two vases with long narrow necks, luted to each other at the bottom, but having no internal communication, and connected at the top by a handle uniting the necks of the two vases. A straight spout rises slantingly in front of the foremost vase to the height of 5 inches, and the corresponding part of the other vase is furnished with a handle instead of a spout. The jug stands 9 inches high, and measures 9 inches across, from handle to spout. It is slightly glazed outside, and painted with diamond and triangular patterns in compartments. These jugs are made by the Kabyles of Algeria, and bear some resemblance to the double jugs found in Peruvian Tombs.

Two flat Querns, with upper and lower stones complete. One measures 15 inches in diameter, and the other 17 inches. Both are well made of a hard black stone, one having a raised border round the upper hole in the centre, and both having the handle hole in a kind of raised boss on the one side.

A water-rolled Boulder of hard quartzite rock, about 5 inches long by 4 inches broad, and  $2\frac{1}{2}$  inches in thickness. On one of its somewhat



flattened faces there are three holes, worn to the depth of an inch by the end of a spindle, apparently of metal, turning in them. The bottom of each hole is about a quarter of an inch in diameter, while at the surface of the stone the hole is fully an inch in diameter. One of the holes has been produced by a cylinder working in it, as shown by the central boss of unworn stone standing up in the bottom of the hollow. On the opposite side of the stone are four holes of the same kind, but smaller, one of which has also been produced by the working of a cylinder.

A Whetstone,  $4\frac{1}{2}$  inches in length, by  $1\frac{1}{2}$  inch in breadth, and three quarters of an inch thick.

Stone Celt,  $9\frac{1}{2}$  inches in length, and  $4\frac{1}{2}$  across the widest part, immediately above the rounded cutting edge.

Portion of a polished Stone Celt,  $3\frac{1}{2}$  inches in length, by  $2\frac{1}{4}$  across the widest part.

Urn of the form called "food vessel," narrow at the bottom and widening till about half way up, from which again it contracts slightly to the rim. It is elaborately ornamented with a double belt of impressed triangular markings round the bulge, and about 2 inches below the rim, the space between these being filled up with rows of impressed markings as if with the teeth of a comb. Part of the frontal bone of a human skull, and a few fragments of other bones found with it, are preserved in the urn.

A number of fragments of coarse Roman Pottery and Samian Ware.

A curious object of Iron. It is apparently part of the iron point of a foot plough with a stirrup-like object attached, the other is the stirrup-like object alone. A similar article is figured in the "Reliquary," vol. x. page 184, where it is described as most probably a Roman skid for a carriage wheel.

A Quaich made of ten separate pieces of wood and hooped.

A Dagger Blade of Iron, single-edged with thick back, 11 inches in length, dug up in 1867, on the battle field of Haughs of Cromdale, fought in 1690, between King William's troops and the Jacobites under General Buchan.

Grotesque Bronze Figure of a Fox mounted on an Ass,  $3\frac{1}{2}$  inches in height, said to have been dug up at Fiesole.

Bronze Figure of Egyptian Bull,  $3\frac{1}{2}$  inches in length, imperfect.



Two Grotesque Leadен Figures, 3 and 4 inches high.

Two Flint Arrow-heads with barbs and stem, one measuring  $1\frac{3}{4}$  inch, and the other 1 inch in length.

A small Oaken Coffe, bound with iron and having two locks, containing plates of pewter stamped with a series of stamps dated from 1600 to 1764. It contains a memorandum stating that it was presented to the Society of Antiquaries (through Professor Simpson), by Edward Huie, Esq., in the name of his son James J. Huie, to whom it belonged. It is also stated to have been long in the possession of a gipsy family, and to have been called Johnny Faa's charter chest.

Hour-glass, formerly used in the pulpit of Bathgate Church.

Fossil Human Jaw in ferruginous earth (locality unknown).

(2.) By Mr ROBERT SMELLIE, Hope Park.

An Axe or Mattock of Iron, measuring 14 inches in length and 3 inches across the face above the cutting edge, found in trenching heather near Lugat Castle, parish of Stow.

(3.) By Lieutenant COLIN M. DUNDAS, R.N.

Two Spear-heads of Obsidian from Easter Island. These are described and figured in Vol. VIII., page 321. Also, a portion of a Fish Spear with copper barb from a Peruvian grave at Arica, and an Ornamental Border of a Gravecloth from a grave at Tambo Huaraca, Peru.

(4.) By CHARLES G. DANFORD, Esq.

Six folios of the Abyssinian Gospels, all illuminated, and containing coloured pictures apparently of the Evangelists. These six folios were selected from the volume by Mr Danford while it lay at Addigerat, before it was obtained by Captain M'Inroy, and they are now presented to the Society to render the manuscript complete, which is described in Vol. VIII., page 52.

(5.) By Dr FERDINAND KELLER, Zurich.

Cast of a Marked Stone from a Swiss Lake Dwelling. The cast measures about twelve inches by nine, and the markings are somewhat obscure.

(6.) By ARTHUR TREVELYAN, of Tyneholm, Esq., East Lothian.

An Ornament of Shale found in the bed of a burn, in the parish of

Pencaitland. This ornament, which is shaped somewhat like a large bead, swelling in the middle and tapering to each end, is 6 inches in length,  $3\frac{1}{4}$  inches in greatest width across the middle, where it is fully an inch thick. It is pierced from end to end by an evenly bored hole  $\frac{3}{8}$ ths of an inch in diameter, widening slightly at the one end where it seems worn on one side by suspension. The other end is imperfect.

(7.) By the LORDS COMMISSIONERS of H.M. Treasury, through the Right Hon. Sir W. Gibson Craig, Bart., Lord Clerk-Register.

Facsimiles of the National Manuscripts of Scotland. Part II. Large folio. 1870.

(8.) By Dr FERDINAND KELLER, Zurich.

Mittheilungen der Antiquarischen Gesellschaft. 4to. Zurich, 1870.

Anzieger für Schweizerische Geschichte und Alterthumskunde. 8vo. Zurich, 1855-7.

(9.) By the CURATORS of the ROYAL LIBRARY, Christiania.

Diplomatarium Norvegicum, Vol. XIV. Christiania, 1869. 8vo.

Thomas Saga Erkibyskups. Christiania, 1869. 8vo.

Flateyrbok, Vol. III., Part II. Christiania, 1868. 8vo.

Norske Stamtavler. Christiania, 1868. 8vo.

(10.) By the LORDS COMMISSIONERS of H.M. Treasury, through the Master of the Rolls.

Chronica Rogeri de Hoveden, Vol. III. London, 1870. Royal 8vo.

Willelmus Malmsbiriensis Monachus de Gestis Pontificorum Anglorum, Libri V. London, 1870. Royal 8vo.

Historic and Municipal Documents of Ireland, A.D. 1172-1320. London, 1870. Royal 8vo.

The following Communications were read :—

## I.

## ADDITIONAL NOTICE OF THE MANUSCRIPTS OF FORDUN'S CHRONICLE. By WILLIAM F. SKENE, Esq., LL.D., F.S.A. Scot.

About this time last year I laid before the Society the result of my examination of the existing MSS. of Fordun, so far as they were then accessible to me. Since then I have, through the kind offices of the North German ambassador, been allowed to borrow the Wolfenbüttel MS., and the collation of that MS. with that of some of the other MSS., has enabled me to come to some more definite results, which I am desirous of submitting to the Society in supplement to my former paper, so as to make my account of the MSS. of Fordun still more complete.

I have now completed my collation of the Wolfenbüttel MS., which I have brought with me to show to the meeting; and the more minute and careful examination of it leaves no doubt on my mind that it is not the original MS. of Fordun's work. It is not written in the same hand throughout, but consists of two parts, each in a different handwriting. The first consists of 85 folios, and the second of 134, making in all 219 folios; and the handwriting of the second part is very much smaller and closer than that of the first, there being in the first part an average of thirty-two lines in a page, and the second of forty-five. Both parts are certainly transcripts, not original MSS. There is some appearance as if they were parts of different MSS. put together, and in the latter part the parchment has been a little larger, and has been cut to correspond with the size of the former; but the MS. was in its present state when in the possession of Flaccius prior to his death in 1570, as there are notes in his handwriting on both parts; and the parchment in the latter part has been cut in the binding, as one of Flaccius' notes has been cut through.

I retain my original opinion as to the date of the MS. It must, I think, have been written not long after Fordun's death, and certainly before Bower began to manipulate it; and I am, after completing the collation, able to say decidedly, that it does not contain one word which has the least appearance of having been added to Fordun's work after

his death, and in this respect stands apart from, and above, all other MSS.

The next point I have to notice is one of some importance. On collating the Dublin MS., which I have not yet seen, and which was done for me through Dr Dickson, the sub-librarian, the first four books showed a text abbreviated from Bower, and differently divided into books and chapters. This text I found corresponded exactly with the text of the MS. in the Advocates' Library, commonly called the Cupar MS. or the Chronicle of Cupar, and which is also differently divided into books and chapters. The "prologus" prefixed to the Dublin MS. I also found was the same as the "prologus" prefixed to the Cupar MS., and on examining the "prologus" more carefully, it is quite clear that the Cupar MS. is an abbreviation made by Bower himself of his larger work in sixteen books. That the "prologus" was written by him is plain; for, after referring to the labours of Fordun, he says that he had added eleven books to the five books left by Fordun.

"Undecim libros ipsis quinque ut patet in magno ubi supra distinctibiliter adjei."

He then proceeds to say, that seeing "*delicatis auribus grata est brevis prolixitas odiosa*," he had himself made the abbreviated copy which follows the "prologus."

As Bower finished his great work in sixteen books in 1447, and died in 1449; it is plain that he had spent the last two years of his life in compiling this new work, in which much of the irrelevant matter in the previous work is omitted, and occasional mistakes corrected.

The third point I have to notice is, that on receiving the collation of that part of the Harleian MS., which is said to be the work of Patrick Russell, a brother of Charterhouse, and which was done for me by Mr Andrew Gillman, of London, I found the text was the same as that in the MS. in the Advocates' Library, called the Carthusian. It, too, is an abbreviation of Bower's work in sixteen books. The title of the MS. is "*Liber Scotichronicon Abbreviatum*," and there is a short "prologus," in which the writer says that, considering the great size of the work in sixteen books, and its "*prolixitas tediosa*," he had abridged it "*ad consolationem et edificationem propriam ceterorumque confratrum meorum Carthusiensium hujus heremi vallis virtutis incolarum*," showing that the



compiler was a brother of Charterhouse, and there can be no doubt that this was the work of Patrick Russell, the latter part of which forms the continuation to the five books of Fordun in the Harleian MS. Mr Gillman has pointed out the following passage to me, which is added by the transcriber at folio 126, *b*, and which shows that the latter was transcribed in the year 1497 for the Bishop of Dunkeld, by "Ricardus Strivelyn notarius Publicus." "*Quamquidem episcopus (Dunkeldensis) quamplurima bona opera tempore suo scilicet A.D. M.CCCC<sup>o</sup> nonogesimo vii<sup>o</sup> apud ecclesiam episcopatus sui cathedralem fecit, unum altare in eadem ecclesia fundavit, vestimentis et ornamentis multipliciter eandem ecclesiam ditavit, præbendis et canonicis exaltavit, unam turrin in loco Dunkeld construxit et totum locum interius reparavit, quamplures libros scribi fecit. inter quos istum librum ego Ricardus Striveling notarius publicus ex mandato ejus scripsi.*" The original abridgment, however, by Patrick Russell was probably made prior to 1451, as he mentions in 1425 that James Stewart, one of the sons of Murdoch, Duke of Albany, had fled to Ireland to avoid the vengeance of James I., and adds, "*Et dictus Jacobus hucusque ad Scociam non est reversus.*" James Stewart died in 1451, and he could hardly have used that expression if his death had already taken place.

The last point I have to mention relates to the unpublished history attributed to Bishop Elphinstone, of which I mentioned that there is one MS. in the Bodleian, and another in Glasgow College Library, and a third in the Advocates' Library. I have since been allowed the use of two other MSS., one belonging to Mr Douglas of Cavers, the other from the Marchmont Library, belonging to Sir Hugh Hume Campbell. The Cavers MS. is a copy of the Glasgow College MS., made on 2d February 1696, by W. Gadderar. The Marchmont MS. contains the same text as the Bodleian MS.; and like it, bears to be transcribed in 1489, but it has prefixed to it a "præfatio" and a "prologus" not to be found in any other MS. except one at Brussels, a description of which I have received from Mr Joseph Stevenson, but which I have not yet been able to examine. This preface is a very interesting document. It states that the work was compiled by an ecclesiastic, who had been in France during the period when the Maid of Orleans played her part in the war with the English, that is, from 1428 to 1431, and was written after his return from France



"Ad ordinationem et mandatum venerabilis in Christo patris ac Domin-  
D. permissione divina abbatis Monasterii de Dunfermlyn nunc  
regentis." The date of the compilation we know was 1461. He under-  
took, besides giving a "compendium chronicarum," to add much that passed  
in his own time, "cum quibusdam aliis actibus mirificis quæ ego qui scribo  
extra limites hujus regni scivi vidi et audivi; item postremo de quadam  
puella mirabili quæ causa fuit recuperationis regni Franciæ de manibus  
Henrici tyranni regis Angliæ quam vidi novi et cum ea fui in questis suis  
dictæ recuperationis usque ad finem vitæ suæ præsens interfui."

This was of course Joan of Arc, who was put to death in 1431.

The work consists of the five books of Fordun, and the fifteen chapters  
of Book VI., with some alterations and interpolations, to which are added  
a continuation of book VI., and six other books, twelve in all. The con-  
tinuation is an independent work, and is not taken from Bower, from  
whom the writer occasionally differs greatly. The thirty-second chapter  
of book X. has the title, "Sequitur de initiis puellæ mirabili provisione  
divina missæ ad succursum Franciæ et de actibus ejusdem;" but, in-  
stead of giving the promised history, the writer stops in the middle of  
the second sentence, and the rest of the chapter is left blank.

The results, then, of my examination of the MSS. of Fordun are as  
follows:—

I. John of Fordun died about 1385 or 1386, leaving an incomplete  
work, consisting of five books completed, to the death of David I.;  
fifteen chapters apparently intended to form part of Book VI.; and  
materials for the remaining history, the first part of which has been worked  
up in Book V., and the chapters of Book VI., and the second part be-  
ginning with the coronation of Malcolm IV., and coming down to the year  
1385. He nowhere terms his work "*Scotichronicon*." When he alludes  
throughout the text to his work he calls it simply "*Chronica*," using the  
word as a feminine singular, and he appears to have intended to call his  
work when completed "*Chronica Gentis Scotorum*," as the work begins  
with a list of the chapters of the first book; and he prefixes the title,  
"*Incipiunt tituli capitulorum libri primi Gentis Scotorum*." He probably  
adopted this title from Bede's "*Historia Ecclesiastica Gentis Anglorum*."  
The materials he left for the history from the coronation of Malcolm IV.  
he calls in one place "*Gesta Annualia*," or, as it should be, "*Annalia*."

This work, as left by Fordun, is represented by\* the Wölfenbüttel, Cottonian, and Trinity College Cambridge, MSS.; and the fifth book, with the "*Gesta Annalia*," is contained in the Dublin MS.

II. Walter Bowmaker or Bower, Abbot of Inchcolm, who was born in 1385, and could not therefore have been, as has been stated, a disciple of Fordun, and employed by him to complete his work, commenced in 1440 an elaborate work in sixteen books, purporting to be a completion of Fordun's work, which he completed in 1447. The five books are largely interpolated and added to. The fifteen chapters left by Fordun are incorporated into the sixth book, and the remainder is Bower's own continuation, in which the "*Gesta*" are taken in, but in many parts greatly altered. Bower termed his work "*Scotichronicon*," and it is to this work, in sixteen books, that the title "*Scotichronicon*" properly belongs.

It is represented by the Edinburgh College and Donibristle MSS., the Corpus Christi Cambridge MS., the Royal MS. or Black Book of Paisley, and the two MSS. transcribed by Magnus Makculloch, one in the British Museum, the other in Lord Dalhousie's library.

III. This work had no sooner appeared than there seems to have arisen an outcry, as well there might, against its intolerable diffuseness and irrelevant sermonising, its "*tediosa prolixitas*;" and Bower, coming evidently to be of opinion that "*grata est brevitās, prolixitas odiosa*," proceeded to compile a new work, in which much of the objectionable prolixity is removed, and the narrative curtailed when not directly applicable to Scotland. It is differently divided into books and chapters, and is represented by the Cupar MS. and by the first four books in the Dublin MS.

IV. The work was still thought too long; and probably after his death, in 1449, but before 1451, Patrick Russell, a brother of the Carthusian monastery in Perth, made a still further abbreviation of the "*Scotichronicon*," which is in the Advocates' Library.

V. In 1461 a monk of Dunfermlyn, who had been in France for some years, and certainly from 1428 to 1445,<sup>1</sup> on his return compiled in 1461 a history, at the command of the abbot, in twelve books. In this he

<sup>1</sup> In a passage in B. xi. c. vii., he alludes to the death of the Dauphiness in 1445, and adds that he had seen her continually during the nine years of her life in France.

uses the five books and the fifteen additional chapters left by Fordun, with some alterations, and continues them to the death of James I.

This work is represented by the Bodleian, Glasgow College, Marchmont, and Cavers MSS., which I have examined; and by one at Brussels, and another in Lord Dalhousie's library, I have not yet seen.

VI. In 1501 an abridgment of the Black Book of Paisley, one of the MSS. of the "Scotichronicon," in sixteen books, was made for John Gibson, a canon of Glasgow, and rector of Renfrew, by John Gibson, junior. This MS. is in the Advocates' Library.

VII. There appear to have been two MSS. containing copies of the five books of Fordun, without alteration.

One, which belonged to the chapter of Dunkeld, was continued, in 1497, by Richard Stirling, N.P., who added five books taken from Patrick Russell's abridgment. This MS. is the Harleian, 4764. The other was continued by an unknown hand in 1509. The continuation, consisting of extracts from the abridgment in the Cupar MS. made by Bower himself. This is the Scots College MS., now in the Catholic Library.

And this exhausts the MSS. of Fordun.

## PREFACES.

### I.

#### CUPAR AND DUBLIN MSS.

##### OMNIPOTENS OPIFEX OPERIS HUIUS SIT ET AUCTOR.<sup>1</sup>

Secundum veteres sanctiones, laudabilis antiquitas patribus a priscis observata, non solum approbanda a modernis esse dinoscitur, sed et imitanda. Enimvero nonnulli ante nostra tempora, luculenter satis inclitorum regum et validorum Scotorum gesta, veridico satis stilo et memorabiles chronicas scriptis reliquerunt. Quæ quasi omnia sui saltem ante tempora membranis commendata.

Ille truculentus tortor Eadwardus iij. post ultimum conquestum, rex Angliæ dictus Langschankis et tyrannus postquam suboriri cepit discensionis materia inter præcellentes principes Broysos videt et Balliolos super

<sup>1</sup> This title in Dublin MS. only.

juris potioritate succedendi in regnum, violenter abstulit et delevit. Attendens ipse propterea ipsum regnum divisum et per præsens verisimiliter desolandum, finxit se velle tractare quæ pacis erant tanquam amicabilis compositor et amicus inter partes, sub ovili vellere allecta sibi callide ejusdem regni Scociæ procerum una parte. Et sit sibi reliqua resistere non valente, ejusdem sibi regni de facto usurpavit custodiam per oppressionem. Ac ipse statim occasione, ut pretendebat, cognoscendi quis eorum per vetustorum grammatum indagacionem plenior in regno vindicare poterat facultatem, rimatis regni cunctis librariis et ad manus ejus receptis authenticis et antiquatis historiarum chronicis aliquantas secum et ad Angliam abstulit reliquas vero flammis incinerandas despicabiliter commisit.

Post quarum quidem chronicarum amissionem, inter paucos alios ad recolligendum deperditas, exurgens quidam venerabilis presbyter dominus Johannes Fordon Scotus nomine ad fortia manum misit et patrio zelo titillatus efferbuit, nec tamen ab inceptis destitit donec laboriosis studiis, tam Anglia, quam aliis circumvicinis provinciis peragratis, tanta illinc et in propria patria de amissis recollegit, quoad usque quinque librorum volumina, de delectabilibus gestis Scotorum, sicut apud Scoticonicon in magno interservi chronologicaliter satis compegit. In hoc laudanda hominiis est industria, attendens ipse quod non hominis sed numinis proprium esse convincitur, cuncta memoriæ commendare. Idcirco et ipse pedestes, tanquam apis argumentosa, in prato Britanniae et in oraculis Hiberniae, per civitates et oppida, per universitates et collegia, per ecclesias et cœnobîa, inter historicos conversans et inter chronographos perhendingans, libros eorum annales contrectans et cum eis sapienter conferens et disputans, ac tabulis sive dipticis quæ sibi placuit intitulans, tali fatigabili investigatione, quod non novit invenit atque in sinuali suo codice tanquam in alveario inventa, quasi millifluos favos accurate congescit, et ipsa, ut premisi, in quinque libros, usque ad mortem Sanctissimi regis David filium Sanctæ Margaretæ, eleganter intitulavit cujus quidam formam et tenorem quam debiliter desiderantur, tam assequens et reumberato considerationis oculo ne abhinc hujus deperirent gesta regni spectabilia undecim libros ipsis quinque ut patet in magno ubi supra distinctibiliter adjeci. Ac etiam ipsis suis quinque libris premissis protractiones lineares cum titulo scriptoris hinc inde intromisi per quod constare poterit legenti quid mihi ipse scriba confecit et quid de meo suis appositum dereliqui. Sed quia delicatis



auribus grata est brevitās, prolixitas odiosa, ideo omissis in hoc Scoti-  
cronicon abbreviato diversis incidentiis et notabilibus allegationibus digres-  
sionibus et exceptis ad diversa proposita perspicue facientibus quæ illinc  
inseruntur, hic per extensum, hic succintius tanquam ad summarium et ad  
alleviationem transumentium et copiare infra scripta volentium stilum pars  
suppliciter et exoro ut

Item ego utinam vicium torporis,  
Dum opus complevero maximi laboris,  
Chronicarum Scociæ volens attemptare,  
Ultra viris arduum opus compilare.  
Per veras depremere propono scripturas,  
Et per scire Scociæ leges et figuras,  
Regum atque presulum planas non obscuras,  
Plebis atque Patriæ plagas et pressuras.  
Paginæ sollicitum lector cor impende,  
Regni quem fluida hujus hic attende,  
Fortuna quam varia fuerit perpende,  
Et ut vivas cautius moribus ostende.  
Lege ergo paginam tibi exaratam,  
Stipuloso scemate ut infaleratam,  
Vernantis eloquii nodis non ligatam,  
Sed Scotorum chronicis veris variatam.  
Ne tu scribam desicis per oblivionem,  
Sed Christus continuum per protectionem,  
Post caduci corporis depositionem,  
Hunc tuam salvificet per orationem.  
Pro scriptore insuper deprecare velis,  
Semel archangelicum illum Gabrielis,  
Ave plena Gratia Dominus est tecum,  
Ut ad sua gaudia se conducat secum.  
Et qui in hoc codice legere letetur,  
Ubi Sancta Trinitas Deus adoretur,  
Illuc indeficiens vita sibi detur,  
Amen queso quilibet ut sit precetur.

Superflua scribere res est jactantiæ necessaria reticere contemptus, ut igi-



tur notam primum refugiam et questum secundi non postponam in Dei adiutorio confisus ad fortia mitto manum letantius ut hoc opera proficiam felicius. Exultatio etenim dat eloquentiam quam interdum negat ingenium et si artium mater est instantia. Novera eruditionis negligentia esse comprobatur quos ad honorem Dei ad solatium regis et regni, necnon ad meipsum interdum diversis sollicitudinibus actediatur et obsessum per delucida intervalla recreandi ad etiam ad cautelam futurorum et legentium edificationem hoc opus aggrediens. Precor lectori Christum reget ore fidei. Ut det actori post mortem gaudia vitæ vel celi. In hoc enim ut reor volumen invenient bellatores dubiorum eventium evitare pericula; religiosi percipient regularia rudimenta. Seculares salubria in cetamenta et predicatorum exemplaria navramenta. Cujus exemplarietate principes in expeditionibus guerrieis cautiores reddentur. Religiosi, religiosi, regularius instituentur et quot quot tædio affecti ipsius lectura lætitiæ condonentur.

## II.

## CARTHUSIAN MS.

## INCIPIT PROLOGUS IN LIBRUM SCOTICRONICON ABBREVIATUM.

Consideranti mihi illius incliti operis historici, liber Scoticronicon titulati, in ingenti volumen sedecim librorum diffuse cronographati, prolixitatem tediosam, fastidii generatricem, et humanæ memoriæ labilitatem. Juxta illud metricum

Longa solent spiritum  
Gaudent brevitate moderni  
Visum est utile  
Pro ingeniosi mei capacitate.

Ex singulis libris memoratis, sub unius mediocris codicis decenti compendio, cum cunctis capitulorum titulis. Aliqua florida magis edificatoria prout superna inspiraverit gratiam excerpere ad consolationem ac edificationem propriam ceterorumque confratrum meorum Cartusiensium hujus heremi, vallis virtutis incolarum, necnon universorum quos historias et chronicas legere ac dinoscere delectatis. In quibus addiscent principes evitare bellorum et dubiorum eventium pericula, religiosi percipient regularia rudimenta, seculares invenient salubria documenta, predicatorum reperient extranea narramenta quibus exemplis reges cautiores reddentur.

Religiosi regularius instituenter, populares ad devotionem accendentur et quot quot tristitia aut tædio affecti lectura hujus codicis lætitiæ restituentur.

Prefatum equidem Scoticon icon volumen quum ad primos quinque libros venerabilis vir Dominus Johannes Fordoun, presbyter, dudum inchoans diserto stilo compilavit residuum vero in undecim libros late pretensum reverendus in Christo pater Dominus Walterus Bowmakar, olim abbas insulæ Sancti Columbæ qui obiit anno domini m<sup>o</sup>cccc<sup>o</sup>xlx. diligenti studio continuavit et usque in finem laudabiliter complevit.

Explicit Prologus.

### III.

#### MARCHMONT MS.

##### PREFATIO SCRIPTORIS.

Honorabilium antecessorum gesta laudabilia ad memoriam reducentes, non solum presentibus ea quæ præterita sunt placabilia recitando proficimus. Ymmo etiam virtutum viatoribus per providorum<sup>a</sup> exempla præteritorum, tamquam per lucernam veritatis ductam ostendimus. Et dum eorum merita recolimus futuris felicibus ad imitandum venerabilium vestigia antecessorum occasionem inclitam exhibemus. Tum enim in omnibus actibus et operationibus humanis fundamentum veritatis quod Deus est, sine quo nihil est validum, nihil sanctum, primitus et ante omnia sit investigandum, ac omnibus carnalibus preponendum affectibus. Debemus omni cura ac in extingibili diligentia infatigabiliter ad eandem totis viribus anhelare. Quia ubi ipsa veritas non est, fundamentum nullius boni operis super edificari poterit edificium. Ad cujus veritatis notitiam dilucide adipiscendam, sine gratia dominica supernaturaliter infusa non poterit pertingere lumine naturali intellectus humanus.

Queramus igitur illam a patre luminum, a quo omne datum optimum, et donum perfectum desursum est descendens. Quoniam ipse solus dat sapientiam et ex ore ejus scientia et prudentia est. Cum sancto Salomone petendo et dicendo "Da mihi Domine se domini tuarum assistricem sapientiam qua mecum sit et mecum labore, ut scientia quid acceptum sit coram te omni tempore," qui optavit et datus est ei sensus, invocavit et venit in eum spiritus sapientiæ. Ad quam gratiam impetrandam nos perducere dignetur qui sine fine vivit et regnat. Amen.

## SEQUITUR ADHUC DE EODEM.

Insuper ut demus gloriam Deo in excelsis laudem post mortem victoriosissimis et invincibilibus Scotorum gentibus defunctis, magnificentiam et honorem venerabilibus vivis digne et laudabiliter possedentibus et diffidentibus et occupantibus nobile regnum Scociæ in tantis mundi imitationibus, tantisque stragibus et persecutionibus, tantis cladibus, præliis, et actibus bellicis, tantis itaque tiranorum inestimabilibus insultibus, tantis proditorum deceptionibus et proditionibus nequissimis. Quibus omnibus non obstantibus domus regia Scociæ a trescentis xxx<sup>ta</sup> annis et amplius ante incarnationem Christi usque ad hodiernum diem sine nationis mutatione vel regie majestatis subjectione honorifice et libere occupavit. Quibus igitur nos laudibus referam nescio videlicet pro eis gratiarum actiones omnipotenti Domino indesinenter agere propono.

## INCIPIT PROLOGUS.

Cum ad seriem chronicarum et gestorum laudabilium veritati enucleationis licet novitas favorable sit et multorum aures audientium, principes tamen et prelati et alii viri famosi in multis et arduis mundane conversationis negotiis, ac etiam in evitabilibus vexationibus plurimum et multiphariis occupati non poterunt sine gratiam pœna, quæ multotiens te Domini inducit, et de cordibus audientium appetitum audiendi extinguit, ad tantæ prolixitatis volumen prout in magnis chronicis ad experientiam videmus diuturnas aures accomodare. Intentio igitur actoris est cum correctione illorum quorum interest vel interesse poterit, quomodo licet in futurum, unamquamque materiam utilem et fructuosam in magnis memoratum, breviter et compendiose gratiam Spiritus Sancti cooperante tangere. Et cum frustra sit per plura, quod fieri poterit per pauciora. Effectum uniuscujusque materiæ tanquam musca mellis in floribus camporum eaque ad omisionem effectualem veritatis rei gerendæ sufficere videntur absque longo processu et multiloquio quæ non nuncquam confusionem et tædium detulerit flore inviolato permanente enucleare elicere et explicare ac inde compendium chronicarum ad appetitum ordinationem et mandatum venerabilis in Christo patris ac Domini D<sup>i</sup> permissione divina abbatis monasterii de Dunfermlyn nunc regentis et deinde monasterium gubernantis confitere. Ultimate vero et in fine acta in tem-

pore nostro ac adentia meliori modo quo potero exclusis inutilibus nugationibus ac etiam frustratoriis vanitatibus ad rem non pertinentibus inquerere colligere, et memorare et inferre cum quibusdam aliis actibus mirificis quæ ego qui scribo extra limites hujus regni scivi, vidi et audivi. Item postremo de quadam puella mirabili que causa fuit recuperationis regni Franciæ de manibus Henrici tyranni regis Angliæ, quam vidi novi et cum ea fui in questis suis dictæ recuperationis usque ad finem vitæ suæ presens interfui, etc.

## II.

### NOTES OF EARLY MONUMENTAL ART IN THE WEST HIGHLANDS.

By JAMES DRUMMOND, Esq., R.S.A., F.S.A. Scot.

In April 1869, I read a paper before this Society upon the style of art sculptured on some monumental slabs, in various churchyards in the West Highlands; and at that time promised, as occasion offered, to add to my collection of such drawings. Since then I have visited many interesting localities, and will this evening show to the meeting the result of my wanderings. I finished my last autumn peregrinations by revisiting Iona. On going into St Oran's churchyard, and looking over the various monuments which I had seen a couple of years ago, placed within two enclosures and surrounded by an iron rail, I was astonished to find one of them amissing. This was the memorial slab to the four priors, thought by many to be the finest specimen of Celtic art in the cemetery. Opinions differ as to this, though certainly it is the most elaborate and perfect, but I am afraid it will not long continue so, as I found it between the two enclosures, and over it every tourist now walks on his way to the chapel. On inquiring what was the meaning of this, I was told that it had been claimed by a journeyman smith, working at the Duke's granite quarries in Mull, who says that it had cost his grandfather seven milk cows and seven bolls of barley. This is too ridiculous; for who could have a right to sell such a thing? But the claim was admitted by the Duke's chamberlain, and there it now lies a sort of pavement for every sacrilegious foot to tread on. Another fine stone was claimed by an old woman, who was a pauper, on some frivolous pretence of the same sort; and one beautiful specimen, which is unfortunately broken in two, was



during last season raised that the child of a labourer might be buried under it. A few more removals of such a stone, and it will be done for. In St Oran's Chapel is a richly decorated stone having sculptured on it the figure of a prior under a canopy. This was carried off a long time ago from Iona and used as his family tombstone by a proprietor near Scoor, in Mull. It goes by the name of "the stone of the boll of barley," such having been the bribe to the ignorant boatman who committed the theft. It was returned a few years ago. Now, surely this system of appropriation ought to be put a stop to, and that by the strong hand, for it is an utter impossibility that the monuments of those old chiefs and ecclesiastics can be the property of these people, many of whom hardly belong to the island. No better illustration could be given of the utter indifference and carelessness, not only of custodiers, but of all connected with this neglected region, whose duty it is to protect from destruction these precious illustrations of the monumental art of a bygone time, than the M'Leod memorial stone, over which the turf was allowed to grow, and so thick was this covering that the very position of it was forgotten, and yet this was one of the most interesting and perfect remaining. It is curious from having a small figure of the chief introduced in a sort of niche formed by the ornamentation. It has always been asserted that he is dressed in the kilt or philabeg. On examining it closely I found the dress the same as the chiefs are usually represented in, namely, a conical helmet and hood with a surcoat reaching to the knees, also a small triangular shield and a spear in his hand. The upper part has a galley, and an inscription, partly illegible, "Hic jacet MakLeoid." Close by this I uncovered another stone, over which the turf had been allowed to grow. On it is a cross, a sword, and the usual scroll work. Besides the more ornamented stones, there are numbers having crosses of various designs incised upon them. The finest of these is what is called an Irish cross. A large rude one on red granite is said to have covered a French king. Lying face downward, and partly under ground, was one of granite, the surface a stratum of sandstone of about an inch thick. This was cut through in the form of a simple cross, leaving the granite as a sort of background. Perhaps the most curious in the whole place—unfortunately a mere fragment—I found among a quantity of other pieces (only the morning I left) too late to make a large drawing. On one side, scroll basket work and one of those odd serpent-

looking creatures twisted through itself, which is often represented in early Celtic manuscripts; on the other, what appears to have been a large galley filled with figures, the most distinct of these being a figure to whom a dragon-like winged animal is holding up his paw. This must have been a very choice cross, and makes us regret more the fragmentary state in which it is. It has often been asked—Is there no way of preserving these invaluable relics? I should say no difficulty whatever, seeing the old order has been departed from; and as no stone is now in its original position, there can be no delicacy in the matter, if the powers that be would only move or sanction some scheme. In such affairs the simplest plan is always the best, and the object would be gained if a simple stone bench, about 1 foot high and 2 feet wide, were built round the inside of St Oran's Chapel, and on this, ranged against the wall, the finest of the slabs, those of figures being placed at the east end, and in front of all an iron rail, to prevent inquisitive people from meddling. But let no sacrilegious hand put a roof on this chapel as has been proposed. Let the more common specimens still lie inside the barriers. Let us glance at the cathedral and the state of matters there. Think of the sacred precincts in connection with it being now let to the innkeeper to graze his cattle—an opening having actually been made in the surrounding wall to give the animals free ingress and egress. Not that the wall is of much use in keeping strangers out, it being quite low; for was it not but the other year that the stewards of two yachts lying in the sound, because the custodier refused them admission on a Sunday, landed in the gloaming, went over the wall, and were disturbed in the act of breaking up the beautiful figure of M'Lean of Ross—one-half of the head being smashed before they were scared and escaped from their impious work! In the grounds surrounding the cathedral stands the magnificent St Martin's Cross. This is considered a model of handsome proportions, but from this opinion I always differed, the upper arm, so to speak, seeming to me too high for the side ones. On looking at it carefully I noticed grooves in the side wings as if for something sliding into. A ladder being procured, I was able to examine them more clearly, and found my conjectures right, the grooves being mortices for something additional of stone or metal fitting into, which would entirely alter the proportion.

Mr Drummond showed drawings from Kilmory and Kiels in North



Knapdale, also from Kilean, Kilkerran, Saddell, Kilkenzie, Kilcousland, and Kilceven, remarking upon the nature of the symbols sculptured on the slabs in the various localities, and referred to the inaccuracies of representation in a series of illustrations of the antiquities at Saddell, showing in what respects they differed from the originals; the figure of Christ, for instance, which on the cross has the legs straight down and the feet separate, was drawn cross-legged, Templar fashion; in the effigy of a knight with a spear in his hand, the spear was left out altogether, and other mistakes of a kindred nature were pointed out, while part of a shield, having an open hand distinctly carved upon it, is figured and described as "the stump of what may have been an animal."

I shall now refer to Eileanmor, which is about two miles from Kilmory. Nearly in the middle of the island is a small chapel, dedicated to St Cormac, as nearly perfect as may be, and having some peculiarities of construction, the most curious being an upper chamber to which access can only be got by means of a ladder. It is supposed to have been for concealment. Adjoining the chapel is another apartment which is roofless; this may have been for secular purposes. This most interesting specimen of early church architecture is only 15 feet by 8. It is now converted into a cowshed, and was in such a disgraceful state of filth that it was almost impossible to go into it—in fact, I had to wade through a quagmire to get near the effigy of a priest which lies under a canopy on one side. This is a most admirably sculptured figure; unfortunately the head has disappeared. The ornamentation on the dress is nearly as perfect as the day it was cut. On the highest point of the island there stands part of the shaft of an ancient cross. When Mr Muir visited Eileanmor in 1864, it occurred to him that other parts of it might be lying about, so he sent his boatmen to search for them; they were successful in finding the disc of the cross, which, for safety, he had deposited in the niche at the chapel, "alongside of the truncated priest, where," says he, "I hope you will find it in peace, should you ever revisit the small grassy Eileanmor." There I found it not, but lying in a corner I saw a flat boulder-looking mass, which, on my boatmen pulling forth, turned out to be the disc of the cross, but so begrimed that, had I not known of its existence, certainly would never have suspected this mass to be the curiously sculptured stone it turned out to be, and which was

with difficulty made visible, after hard work in scraping and picking. On one side is a quaint representation of the crucifixion ; on the other, a scroll-work of foliage. It is entirely different from the Macmillan Cross at Kilmory, looking earlier in style. While hunting up these antiquities, the remark of my namesake, that "property has its duties as well as its rights," often occurred to me, and the thought would force itself upon you—How strange that men possessing fine properties, full of archaeological remains, of ruins brimful of association and suggestive of romantic story, of monuments to men, not the less interesting that in many cases their very existence is a dream, but whose strong arms and restless stirring lives must have influenced for good or evil the times they lived in,—remains, which to them should be the more precious, that in our country art antiquities are scarce, and should therefore be the more cared for, yet such are not only neglected, but in some cases have been defaced.

The armour of the knightly effigies found in the West Highlands is a most puzzling matter. One thing I have not yet found, at any place which I have visited, what we now term the Highland dress; the nearest approach being on a cross at Kilkerran, but it is not the belted plaid, the true old form of wearing the dress. A figure at Kilmichael Glassary at first sight struck me as so dressed, but, on examination, it proved to be the same as most of the others, only very rudely sculptured. One peculiarity about these figures is the form of the helmet, which is almost invariably of the same type—the bascinet of the thirteenth or fourteenth century, that of M'Lean of Duart, at Iona, having a dragon as a crest; the same is also on his shield. The surcoat, which is generally sleeved, is unlike any other knightly dress I know of, apparently made of leather or strong cloth, quilted in regular folds, and held to the arm by bands of steel above and below the elbow. In the figures of Maclean of Duart and Maclean of Ross this is different, seemingly of different material, but not quilted, and in no other but these did I find an indication of plate armour. Where the feet remain the toes are generally pointed, thus indicating an early date.

A conversation followed the reading of this communication, and, on the motion of Mr W. F. Skene, a small committee was appointed to call the attention of His Grace the Duke of Argyll to the condition of the buildings and monuments of Iona.

## III.

ON THE ROUND CASTLES AND ANCIENT DWELLINGS OF THE VALLEY OF THE FORTH, AND ITS TRIBUTARY THE TEITH. BY MISS C. MACLAGAN. COMMUNICATED BY JOHN STUART, Esq., LL.D., SEC. S.A. SCOT. (PLATES I.-III.)

As the earliest historic notices of Scotland have come to us from the pens of its Roman invaders, it may be that this fact has been the cause, though certainly it is not a good reason, why our modern writers have so long and largely turned their attention to everything Roman which can be traced on the soil of Caledonia, and in their abounding zeal for that people, have willingly given over to their credit many works to which they can justly lay no claim, and, at the same time, have passed over with most unpatriotic neglect the remains which tell to us, their children, of how our "rude forefathers," with noble resolve, withstood the military skill and prowess of the soldiers who had subdued the world.

The following notes and sketches are a small contribution towards the knowledge of the British antiquities of the region which lies nearest to the wall of Antoninus, and chiefly treat of the castles and other strengths of the valley of the Forth.

On the northern slope of land ascending from the banks of the Carron and of the Bonny rivers, and confronting the Roman wall, having only a narrow but deep morass between them and it, there certainly had stood a complete and long line of British defences. Gordon, in his "*Itinerarium Septentrionale*," mentions them in detail, and in describing them, proves to us that they were of British "build," and yet, at the same time, he calls them Roman. These forts *we* incline to term the *first line* of defence; but as the writer has not yet sufficiently examined it, in the meantime it is passed over, and these notes begin with what might be called the second line.

This second line is ranged along the southern side of the valley of the Forth, and the first round castle which falls to be mentioned on that line is the one now known as the Tappock.

*The Tappock.*—The hill on which it stands has a gentle slope towards the valley of the Carron on the south side, and towards the valley of the Forth on the north and east, but to the west it presents a bold precipitous

front, and on the brink of that precipice this building is situated. The whole of this and of many surrounding hills was formerly covered by the Great Torwood, said to have been the latest lingering remains of the primeval forest of Caledonia ; and it is somewhat noteworthy, that during many successive and comparatively modern ages, we find it said of one defeated army after another, in the history of the national wars, that the fugitives found refuge in the Torwood. Can it be that they fled to the Tappock and its neighbouring strongholds?

When we think of the impenetrable forest, the rugged mountain land, and the long covered ways leading to the strong dark doorways of these castles, we can perceive how difficult it must have been for the Romans to drive out from these their "*boroughs*," even though near to their own quarters, a warlike people so lodged and so hidden.

The following are the dimensions of this structure :—

The area of the inner circle is 33 feet in diameter at the lower portion of the wall. It is two feet greater in the upper portion, for after the wall rises to about 8 feet in height, it then, with most regular masonry, retires one foot all round the building, and then continues perpendicularly to 5 or 6 feet higher, but evidently this wall had once been much higher than we now see it to be. The increase in the diameter occurs on a line with the lintels of the two doorways ; and on the sort of shelf formed by the retirement of the wall there had most probably rested the roof-beams of the lower story of this centre tower, it may be, of the building, for tradition assures us that all these castles once had roofs.

From the circular bend in what remains of a stair in the wall (ten steps), it seems likely that there had formerly been an upper story to which it had led, for the bend does not point outwards. The enlargement in the higher portion of this structure is common to many others of the same kind.

The stair above mentioned is 2 feet 6 inches wide, and the length of the passage leading to it is 11 feet. The lintel of its door and that of the other are both formed by two great stones, the one laid above the other, so as to give a strength sufficient to upbear even such a mass of wall as we are supposing to have been and still in part see remaining here. This wall is 21 feet in thickness, and in the passage leading outward through it there occurs near the middle of the wall another pair of such



door posts and lintels, and at the outer side of it a third pair, forming as it were three places where gates might be fixed. This also is a common feature of the entrance to such inner chambers of castles of the kind. All of these stone door-posts of the Tappock are 7 feet 6 inches high. The inner half of the entrance through this wall is of an oval shape, the outer half is quite straight, and all of it (21 feet) is roofed with great stones, which reach from side to side, which space is about three feet. In its entire thickness this wall appears to be built of shaped stones, sandstones, and many of these are so white, clean, and free from all decay, as still to have the quarry marks upon them,—a fact which may be accounted for by the whole having been so thoroughly buried in the soil for long ages. Two feet by 18 inches is about the general size of the great mass of the stones. A specimen of the masonry is given in the drawing exhibited, and also in Vol. VI. of the Proceedings, Plate XVI.

Masons say that the stones are arranged with skill. Around the outer sides of all the walls are placed at regular distances of about 12 feet large upright stones, 4 feet high and 2 feet broad, used probably to bind and strengthen the masonry.

At the distance of 30 feet from the innermost wall there occurs another and semicircular wall, having the two ends of it resting on the brink of the precipice; part of it is still 10 feet high and 10 feet broad; and again, at the distance outward of other 30 feet, there is another semicircular wall, which is about 4 feet high and 7 feet broad.

The entrance to this stronghold seems to have cut by a straight line right through all the three walls, and that in a north-easterly direction, and there still remains 30 feet of it having good masonry on either side. In digging out the rubbish from the central portion of the building there were found some stone balls, two querns, and two stones having on them those circular markings which are now so much attracting the attention of antiquaries. (See the list of donations of articles found in excavating the Tappock, by Col. Joseph Dundas of Carronhall, in the Proceedings, Vol. VI. p. 111.)

Even the mighty hand of time could but very slowly have wrought scathe to walls so strong as those of the Tappock, but the hand of man has been from time to time busied in removing their materials, and, as might have been expected, the outer wall has been the first and greatest

sufferer, and in the surrounding walls of many a field and many a road we see a prodigality of goodly masonry, which tells us very distinctly that the stones of it were got very cheap. The kerbstones, also, of the foot-paths of one road along five miles of it appear to have been similarly obtained. From the castle down hill to the high road there is a broad road (10 feet broad) all paved with the same stones, and it was no doubt made to assist in the process of removing the stones. There is about half a mile of this paved way. It is not Roman, is too *broad* to have been a British way, and, doubtless, it is modern, though in our times we seldom pave our rural ways, but then here the stuff for doing so was already made.

Immediately on the south side of this hill fort there still remains about a mile of the real Roman road leading to the north of Scotland. Its walls and ditches are most distinctly there, but of the Roman we are not here writing.

The above description may to some appear unnecessarily minute, but it is so intended, because to understand this one structure rightly is rightly to understand the whole class to which it belongs. (See Notes on the Excavation of the Tappock, by Col. Joseph Dundas of Carronhall, in the Proceedings, Vol. II. p. 259, and Plates XV. and XVI.)

We now pass on westward about two miles, to where there is a rocky knoll perhaps not more than 100 feet in height. It is precipitous only on one side, and there a stream winds around it. On the north side of this knoll is to be found the small underground structure represented in Nos. 7 and 8 of the drawings exhibited.

This small round chamber is 12 feet deep, by 6 feet wide at the bottom, and 10 feet wide at the top. There is a covered way leading out from the bottom of this curious place, of which 30 feet still remain; 8 feet of it has a roof formed of large stones, which reach from wall to wall, and the space between these walls is  $2\frac{1}{2}$  feet wide. This "way" may have led to the water supply (the stream and a fine well) of what appears to have been a round castle larger than the "Tappock" itself; but as this hill is of very easy ascent, there now remains only a very dim outline of its walls, for the easy access has made the removal of its stones all the more complete. From the great number of shaped stones, and also from the circular arrangement of these, as is indicated in the accompanying drawings, it seems highly probable that the small round chamber formed a part of a large fort which had formerly covered the whole of the rocky mound.



Here, again, we observe in the farm walls around that abundance of shapen stones which affords us a hint of the ease with which they had been procured, and justifies the saying, "That a shapen stone never lies long on the road."

Travelling about four miles further west, until we get near to Stirling, at a mansion-house called Livilands, there has stood another of the round houses, which seems to have had three circular walls with probably 20 feet of space between each of them. The stones of these walls are all gone, but the mark where their foundations had been is sufficiently distinct. The area of the central chamber had apparently been about 50 feet in diameter. It is situated on a part of that terrace or ancient sea-beach which is found around almost the whole valley of the Forth, and on which elevation many of those round houses are built. Its height is about 40 feet.

In the centre of the valley, and crossing it at right angles, is a line of rocky eminences anciently called the *Govane* hills (now the Gowlin), and on the most southern part of these rocks is Stirling Castle, on whose site, we are told, there once stood only one round castle or tower; and, in the oldest notices we have of this place, it is called a *dune*—and first it is Snadune, then Snawdun, then Snowdown, and, by-and-by, when we hear of a town being added to it, it is called Strevelling and Sterling. The poet Lindsay calls it, "Snawdun, we thy touris hie." Sir Robert Sibbald and Mr Horsley speak of the remains of a Roman station, visible in their times. Early in the last century the *Prætorium* still remained, and was described as being fortified with three ramparts of earth with fosses, and these ramparts so high that "a man on horseback could not see over them." We are rather inclined to take these walls from the Romans and claim them for our forefathers; but, as Boece says that Agricola fortified this place, we must leave it in doubt. On the most northern of these "Govane" hills certainly there are the foundations of a real British round castle, on a mound now called "Murdoch's Know." As for the walls of it, few note their presence under the thick grassy turf, for they have been cut through and thrown out of all shape in the construction of modern walks, but a practised eye can easily discern the lines of both its inner and outer walls, and at the distance of half a mile the outline of the whole hill reveals the contour of an ancient

castle—the levelled top, the terraced ground, &c. The area of this fort had been 50 feet in diameter, the inner wall appears to have been 20 feet thick, and the outer wall probably about 7 feet thick, with a distance between the two walls of about 25 feet. The walls have been of sandstone; the hill on which it stands is a basaltic rock. In more modern times this place had been used as a seat of justice (or, shall we say, injustice), and here it was that Murdoch, Duke of Albany, his two sons, and his son-in-law, were beheaded in one day; and Scott, in his “Lady of the Lake,” apostrophises it as “Fatal mound, that oft hath heard the death-axe sound.” This “mound” overhangs and commands the modern bridges of Stirling; but it ought always to be remembered (and by historians seldom is remembered), that in the days when men dealt death to their fellow-men by axes and arrows of stone, and built themselves round castles, they did not cross the Aven Dhu at that place—they must have crossed it before it was swollen by the addition of the Teith and Allan. Even the Romans appear to have done so at or near to Craig Forth at a place called *Kaimes*, where we doubt not, from the name, that there once was a *camp*, mayhap a Roman one, for there we have the most abundant traces of the line of march of those invaders who, in going north through the valley of *our vision*, have left the marks of their axes on the trees recently dug up at Blair Drummond; and probably they crossed the Teith near to that place, and then, following the level of the river Ardoch, arrived *in safety* at their camp at Ardoch, a thing which it would seem that, in a military point of view, they never could have achieved by following the steep, narrow course of the Allan. But, having forwarded these people through our lines of British defences, we again return to “our own people;” and, two miles west from Stirling, near to the old rural village of Gargunnoch, we find *the Kier* of Gargunnoch. In the first syllable of the name of this place we have, no doubt, “*caer*,” and in the last knock, knoll, or hill—castle and hill. “The knock” on which the round fort or kier is built is a conically-shaped rock of the very reddest sandstone, a soft damp stone, but the ancient castle-builders were too wise to use any of it for their masonry, so they have brought all the stones for their walls down from a stratum of basaltic rock which stands about a mile up the steep mountain side to the south of it; and this circumstance of the basalt being used in the con-





GROUND PLAN OF CASTLE ON BENLEDIE.



THE KIER OF GARGUNNOCK.



THE KIER OF GARGUNNOCK.



struction of it, makes it very easy even now, when almost all their material is removed, to be able to tell with certainty that once on a time those walls had been great, for on either side of this kier there flows a mountain stream whose bed is filled with the large gray boulders of basalt of which they had been formed. The modern bridge in the village appears to be built of this material also. A drawing and ground-plan of this kier are given in Plate I. It seems to have had three circular walls, of which the central is somewhat oval, and besides these defences there had been, both on the north and south sides, a moat which had been filled with water from the two streams which pass close by it on the east and the west sides. This castle stands on ground slightly elevated, and "the knock" has very steep, rocky sides; but the next fort we have to mention is quite down on the plain, and owed all its strength to its water surroundings; it is called "the *Peel* of Gargunnock." A small stream runs on the east side of this place and another on the west, and on the north is the river Forth, so that there was only needed a moat on the south side of it to make an island of the place, and no doubt such it had been, as its name indicates, for "peel" and pool are the same in signification; and here it may be added that "pol" and "pow" (sounded "poo") are all modifications of the same word, and that word abounds in all the valley of the Forth. Will it be found true that the border "peels" all had moats around them? Of the stone defences of the Gargunnock "peel," there remains only a small portion of one wall, for it has fared peculiarly ill with this antiquity, as in recent times both a highway and a railway have been carried right through its site. In Blind Harry's "Wallace" we find that this place was garrisoned by English, and that Wallace surprised and took it and *them*, which event brings down its history to times too modern for these notes.

Five miles further west in the valley from Gargunnock, at the village of Kippen, is "the Kier of Kippen." Its situation is not high, perhaps not a hundred feet above the plain and river Forth. On the east side of it is a deep glen with a pretty mountain stream running and leaping over falls as it passes through it, and its banks are very precipitous under "the Kier" wall. The centre of this castle is about 90 feet in diameter; part of only one wall remains, and it is about 12 feet broad; but there is some cause to believe that it may have once had the usual three walls, as



the bridge across the stream by its side, and also many roadside walls, appear to have been built out of its material.

The other four stone circles in this parish have had the fortune to be mentioned in writings of several antiquaries, but have little claim to such notice. The one, which is 30 feet in diameter, may have been a *strength*, but the others are mere—perhaps rather modern houses. A tumulus near to the railway line was lately opened, and in it was found “an auld can” and some coins.

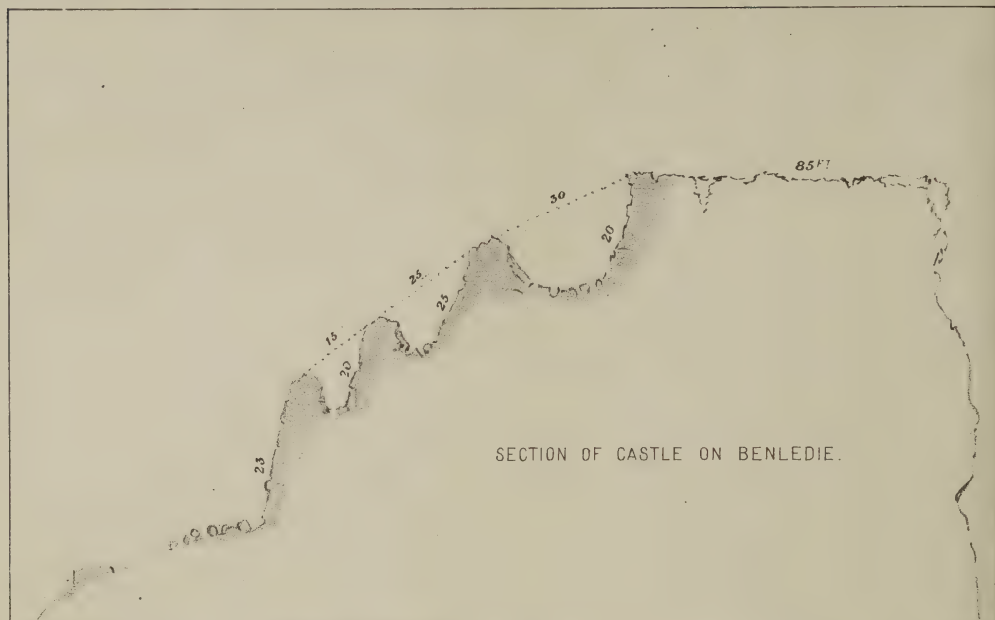
At Kippen the valley is closed in by the mountain ranges meeting together, and its kier is the farthest west of the castles, on its south side. We shall now pass over to the north side, and there, right across the plain from Kippen is Benledi, and on its giant roots is the first of what might be termed the third line of defences to the north of the Roman wall.

Bochastell is in the parish of Callander, and is situated about 2 miles west from the village of that name; and there, on a spur of Benledi called “The Dun of Bochastell,” is the stronghold. (See Plate II.) The top of this “Dun” is probably 600 feet above the Loch Vennachar, which lies close at its foot. The summit of this hill is artificially flattened, and forms a perfect circle in diameter 85 feet. The one half of its circumference has a perpendicular precipice for its very sure defence, and the other, which is also almost a precipice, is made strong by five walls, all of which, with the exception of the outer one, are more than 10 feet broad, and that outer, or fifth wall, is 4 feet in thickness. The distance between the top of the first wall and the top of the second wall is 30 feet; between the second and third walls is 25 feet; and between the third and fourth walls is 15 feet; the average height of each being about 20 feet. (See section, in Plate II.)

The fifth wall is very irregular in its course, and is now quite low, merely visible, but very distinctly so. On the north side of the castle it takes a circular sweep around a lower hill, which, in a military point of view, is dangerously near to the Bochastell. The diameter of this circular outwork is 115 feet. Close to the place where all the walls approach the perpendicular cliff there is a gap or cut right through all of them, except this fifth one; and in this gap, no doubt, had been the entrance to the building.

All the walls are built of sandstone as is the rock on which they rest; but they are now so covered with thick green turf that it is usual to hear





them spoken of as earthworks; but a moment's reflection would teach any one the impossibility of such being the case, for there is no soil on this lofty steep out of which to construct them.

In the inner circle is a fine spring of water—a rather singular place for one. At times it wells up so as to make a pretty round pool on the top of this cliff.

The view from this “Dun” is very noble. Far below are the Teith and Loch Vennachar, on the south; to the north, are Benledi and the fine mountain “Pass of Leny,” leading on to Strath Ire; and westward, we see all down the vale of Teith to Stirling, Linlithgow, and Edinburgh. A fitting place surely this for a “Bale Fire.”

The name Bocastle is now attached to the humble homestead on the meadow below, and the once famous fortress is well-nigh forgotten, and so little indeed is it known that even the careful Burton, in his “History of Scotland,” has called it a Roman fort. To see it is to know that it is OUR OWN.

Sometimes we hear regret expressed that on these buildings we find no inscription to tell the story of their builders; but are not the buildings themselves an inscription recording that they were no wandering hordes, but a sturdy people, saying, This land is ours, and we will hold it.

About 4 miles eastward from this castle had once stood a much larger one. Its site is on the farm of Auchinlaich, on an eminence a few hundred yards south from the Bridge of Bracklinn, and on the west bank of the Kelty river. There remains little to indicate its presence save the levelling of the top of the hill, and a slight indication of what was once an earthen rampart and ditch,—a fact which is mentioned in the Old Statistical Account of the parish of Callander. The area of the fort must have much exceeded 100 feet. In a south-easterly direction from Auchinlaich, and at the distance of about 7 miles, and about 4 miles south from Doune, there is on the estate of Coldoch a round house, or rather the remains of one. Three or four years ago I mentioned to the late Sir J. Y. Simpson my assurance that such a building was there, and gave him drawings of the external indications of it, and of the one wall-chamber which was then visible, and was then called a Roman well! The nature of its masonry at once showed me that it was British work-

manship, and its surroundings showed it to be a house. Very lately your Society has had excavations made, and the accompanying drawing gives its measurements in an exact manner.<sup>1</sup>

It is built of stone, and its masonry is rude, all the lines of it being very irregular, and the stones small. The entrance to the house is the feature of greatest interest, as it serves to explain the form which is found in the entrances of other castles, such as the Tappock, where there is this sort of entrance, but not the great stone door, to explain the curious bulge in the form of the entrance gallery,—a bulge, no doubt, serving to make room for the great stone when it was rolled aside; and we may observe how judicious were those ancient architects in placing the door in the centre of this 19 feet wall—a wall which, being built without cement, could at no other place have sustained any force applied to its door.

Again the ascending stair is the same in form as that of the Tappock, and, no doubt, led to an upper story, and probably to a gallery and chambers, such as in Castle Troddan in Glenelg and other so-called Pictish brochs. The measurements are these:—Thickness of wall 19 feet; the entrance running through it is generally about  $2\frac{1}{2}$  feet wide, but immediately within the door-posts it bulges out to a width of 3 feet 9 inches, and in this place stands the ponderous stone door; the stone door-posts are 10 feet in from the centre chamber. The passage leading to the stair is 7 feet long by 3 feet 4 inches in breadth; after the bend in it the passage and stair are 13 feet; steps of stair remaining, 7.

The north chamber is 8 feet 3 inches by 4 feet 8 inches, and in height to roof 7 feet.

None of the other chambers have the roof remaining to them.

The south chamber is 8 feet 6 inches by 4 feet 6 inches.

The west chamber is 5 feet by 5 feet.

To all these the entrances are about 2 feet wide and 4 feet high.

The site of this house is on that formerly mentioned terrace-level which surrounds so very large a portion of this valley, and is so well fitted for such strongholds.<sup>2</sup>

<sup>1</sup> A notice of this broch, with plans, will appear in the Society's Transactions, the *Archæologia Scotica*, vol. v.

<sup>2</sup> I find there lately were other six *Duns* in the immediate neighbourhood. The names of these were Auchinsalt, Borland or Torland, Balmackader, Jarr or Tor, and Kier.



About half a mile west from this is an artificial mound of perhaps 50 feet diameter, but it has not been opened.

Returning again to the line of the river Teith. Near to the Bridge-of-Teith is a small tumulus, and in this neighbourhood are two round rings, the probable remains of ancient houses, but possibly not very old, as in St Kilda the inhabitants still use this form, evidently the one best suited to buildings made without cement.

Doune (Dun), no doubt, had once, where its castle now stands, a more ancient fortress; but the name is all that now remains to bespeak it. About half a mile east from Doune is a round site preserved by fine pine trees, and north from that place, on the farm of Glenhead, is a cluster of four "standing" stones, one of these having on it some "cup markings."

On the same farm, on levelling a mound with the view of ploughing the field more easily, there were discovered several stone cists, and in one of these was found an urn of burnt clay, a full sized drawing of which is given, and also a stone hammer of a peculiarly hard stratified gneiss, nearly black in colour, highly polished on the surface. Stone of the sort abounds in the neighbourhood. On the same farm is a monolith of great size; also an earth-work an exact square of 100 feet diameter: lately it stood 4 feet high like a great table, but the frequent run of the plough over it has now almost effaced it. No doubt it was a Roman work, and is on the line of way we have pointed out as the one they probably took to march from the valley of Forth to Ardoch camp.

Three miles farther east, on the heights to the north of Bridge of Allan, there is an artificial mound about 50 feet in diameter. It has been opened and pronounced to be a tomb; but the view from the place is so wide and useful, in a military sense, that one might rather suppose it was a lookout of the living.

Still farther east 2 miles, we meet with the Abbey Craig and its "Wallace Camp." The central area has been of oval form,—a precipice protecting about one-half of its outline (the western half); the other is on ground sloping very steeply to the east, and on that side it has had a double wall. Part of the inner wall is still about 10 feet high, and probably twice as broad. It has been constructed partly of earth and partly of stone. The second wall is of stone, and there is a good deal of *vitrified*

stone around this fort. Unfortunately this ancient castle is almost buried among the debris of the modern Wallace monument.

To the north and east of the Abbey Craig is the Ochil range of hills; and on one, that range called Castle Law, a part of Dunmyot, there are the remains of a large round castle. (See Plate III.)

The centre area of it is an oval 85 by 55 feet in extent. The wall around this part is quite complete as a line of stones, but is now as low as the turf in many places, and is nowhere more than 2 feet high, and only 4 feet broad. Outside of this wall are three others, having about 30 feet of distance between each of them.

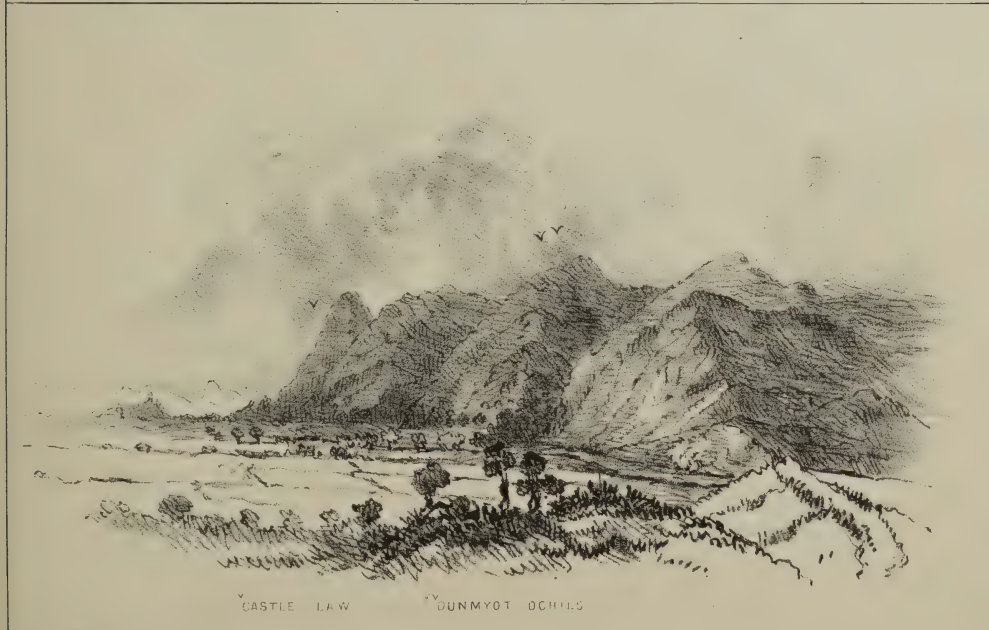
The stones of these walls, now remaining, lie on the slope of the hill in fan-shaped heaps, on the site of the several walls; but, owing to the extreme steepness of the ground, they are also scattered over the intervening spaces. Still the original lines of each of the walls are easily traceable.

The precipitous form of this hill makes the dispersion of the material of this castle a consequence of the laws of nature; but, besides this, there is here another cause of dilapidation, for nothing is more common than to see the idler rolling its stones over the cliff, and then with eager delight watching their progress as they bound down the sides of the mighty precipice which surrounds this "castle in the air." The height on which it stands must exceed 1000 feet.

The Castle Law is of basaltic formation, and the round castle is built of the same stone, and as seems usual in this neighbourhood when walls are constructed of that material they have no great mass, probably because this stone is so hard and difficult to quarry.

As an indication that this popularly called "cairn" was once a human habitation, it is remarkable that its stone heaps are covered with nettles, while on all the hill around this plant is nowhere to be seen.

On the western side of this hill is Blair Logie Glen, and from the upper end of it there run two parallel walls, forming a very narrow way, which way leads in the very best line of ascent to the castle, and can lead apparently to no other place. Fully half a mile of these twin walls is most distinctly traceable. It is doubtful that it has been a *covered* way, as it is *now* at least, rather wider than such ways generally are found to be; but it still is deep enough between its walls to show how easily it could be made a hidden way. That such might be highly desirable will





be at once recognised when it is stated, that about half a mile distant, down on the plain, at the banks of the Forth, it is believed that there stood a Roman fort, where their fleet was moored—at the Pow, Poo, or Pool.

*Tillicoultry Castle.*—On the front of the same Ochil range, and about six miles further east, in the parish of Tillicoultry, and on the side of the glen of that name, there are the vestiges of another round castle. It has had three concentric circular walls, with about 25 feet between each of them. The central circle was probably 80 feet in diameter. The desolation of this place is almost complete, all the usable stones of the structure having been removed to build sheepfolds; and the square walls of these folds may be seen traced within the bounds of the original circular ones of the ancient castle.

Only the poorest debris of the material of these walls now remains; and yet so recent is the destruction which has come upon them, that aged people in the village tell that they remember, when in their childhood, much of the building had a roof upon it—a roof of stone,—but they could not describe the manner or extent of it; but that “it was fine fun to play in ‘Johnnie Mool’s hill,’” the name which the aged people gave to the place.

The rock on which the fortress occurs seems to be about 400 feet high, and is so singularly steep, that, in many parts of the ascent to it, the way has to be formed by long wooden stairs.

The view from the top of the castle hill has in it almost every feature that goes to constitute fine scenery. The wild, deep, rugged glen—the lofty mountain (2700 feet high)—the far-stretching valley—the glittering winding river—the distant sea,—all make up a scene of rarest beauty. But it is true of each of the sites of the castles mentioned in these notes, that the view to be obtained from it would (though there were no anti-quinities on them) be sufficient reward to every visitor.

As this is the last fort on our so-called third line of strengths, it may here not be out of place to offer a few remarks on circumstances that seem common to the class.

The first thing which their architects appear to have attended to in setting about to build was, thoroughly to level all the space intended for the area of the central part of the building, be it house or castle. These



round forts are most frequently situated on the top of conically-shaped hills; and these hills are often spoken of as "truncated," for many a fanciful purpose, such as sun-worship and the like, when simply those sensible Britons only wished to have plain floors for their dwellings as we do. Again, when they had outer walls to build, they scooped out the slope of the hill until they had got a sound horizontal space on which to found them. And so certainly is this the case, that on many a hill-top, long after every stone of a once goodly structure has been removed, one will find printed on the soil the outlines of the foundations; and these are the most distinctly visible when one looks at them as a SKY-LINE.

It will also be found to characterise most of them, that the innermost of their concentric walls was the broadest, and that each successive wall was less broad, as they were more distant from the centre. An instance of this may be seen in the Tappock at Larbert. So far as our present range of observation teaches, it also seems true of them, that those which are built of sandstone have the most massy walls, the whinstone walls being very much less so. Perhaps this was because of the superior durability of the latter stone, making less bulk necessary—but more probably because of the greater difficulty of quarrying it. The only way known to us by which they could split up that stone, was by kindling fire along the line of intended fracture, then pouring water upon it, and striking heavy blows on the part. This method would serve for large masses, but could not be well used for small.

Generally speaking, all forts have in them, or very near to them, a good water supply; and in cases in which that supply is from a stream at the bottom of the mound on which they stand, you find traces, more or less distinct, of a covered way to that stream.

There is much reason to conclude that the entrances to their buildings were commonly by covered ways. At present we do not offer proof of this conjecture, but may at another time.

There now remains only that the roof be spoken of, for roof there no doubt once was to all of them. Surely those men who were wont with such care to cover the heads of the dead, would know how to shelter the heads of the living? In the vaulted chambers we see one style of roof, and in the Glenelg and Orkney "Pictish Brochs" we see a modification of

the same, and we venture to add to these the much written of "Arthur's oven;" but of this in another paragraph.

And now mention may be made of the ancient geographic state of the district in which these antiquities occur.

It cannot be doubted that 2000 or even 1000 years ago the Carse of Stirling or Forth valley was an uninhabitable swamp, for nowhere upon it do we find remains either of castles or of villages, and indeed up to this day there are no villages on the plain; and until very recent times fever and ague so abounded there, as to furnish very sufficient reason why none but the farmers of the soil should be willing to live upon it. They and "will o' wisp" had it all to themselves, and all the villages were placed a good way up on the roots of the surrounding ranges of hills on either side of it, and the roads hobbled along over the rough ground at their bases; and, in truth, over the whole plain, it is everywhere easier to find the remains of colonies of *oysters* than of men.

*Arthur's O'on.*—Returning to the same point from which we started, that is, to the banks of the Carron, we shall offer a few words on an antiquarian pet, now, unfortunately, only to be found in books, we mean "Arthur's O'on."

If any one will attentively compare the masonry of it with that of *all* other known British buildings, the *aiming* at an arch by the method of pushing forward one stone beyond another until opposing walls meet—the leaving an opening in what stands for a roof—in these and in other points this erection will be found to be somewhat similar to the Pictish towers in Glenelg. And as for the *Roman* arch of the doorway, it has no doubt been added by that people; for besides its being a true arch, and therefore not British, it is also an arch the most difficult of construction—one made in a circular and semi-arched wall; and, moreover, there is very good proof that said invaders had used this building, as there once was a Roman inscription over the inner lintel of the doorway; and besides, if this people intended to use this building, they were not likely to choose to creep in and out of it by the sort of lowly-covered way, which evidently was the only kind of entrance which the British builders of those times gave to any of their houses.

Gordon, in his "Iter," mentions the inscription over the door of the O'on; and in the copy of that book now before us, there is a manuscript

note in these words :—" In a manuscript collection at Panmure, there are at the end of *Extracta Chronicæ Scotiæ*, notes by Henry Sinclair, dean of Glasgow about 1560, when he affirms the inscription was visible above the door of Arthur's Huif," as he calls it.

" Boece wrote in 1525, and had probably given a faithful report of this inscription, Sup. 27."

To the above note we now add an extract from Gordon :—" It, the O'on, goes frequently under the appellation of Julius Hoff, or house ; and if ever the initial letters J. A. M. P. M., mentioned by Sir Robert Sibbald, were engraven on stone in the building, it may not be reckon'd altogether absurd that they should bear this reading—Julius Agricola Magnæ Pietatis monumentum Posuit Templum."

The opinion of such a tyro as the writer is of small value ; but by adding some *facts* to the knowledge of more knowing ones, she may help to a just judgment on a subject on which *fancy* has had full sway. Here is a little morsel of the *real* near to this oven—there is a place called Dunoven—"Dun," a fortified hill, and "Aven," a stream, so might not the "O'on" be rendered for Arthur's oven—"Ar" belonging to ; "Thor," God ; "Oven," stream ; a river of God ? In the Norse language we learn that "Thor" is still the Bible name of God, the translators using that word ; and in this neighbourhood we have many "Thors,"<sup>1</sup>—at Larbert Tor wood, or the great Caledonian forest—Tor brex, Tor mill. Some say that the word signifies *High*, but the two last of these "Tors" are low-lying places ; but grant it to be high, then still we know what is meant by the MOST HIGH.

Tacitus says that Julius Agricola *helped* THE BRITONS to build houses and places of public resort ; in which case here, if anywhere, we might look for buildings of a mixt architecture, such as is above hinted at for this "O'on." And in the long period during which the Romans remained in this part of the country, it were unreasonable to suppose that our forefathers did not learn many of the arts of life from the invader, and particularly those of building and road-making.

<sup>1</sup> *Tor*, in Gaelic, means a stone or rock.

## IV.

## NOTES ON THE SHELL HEAPS NEAR INVERAVON, LINLITHGOW-SHIRE. BY DAVID GRIEVE, Esq., F.S.A. Scot.

It has been long known that there existed a great accumulation of shells, mostly of oysters, in the above locality. The bank or heap has been broken into, and exposed on more than one occasion, and noticed as a remarkable circumstance in the history of the district. Pennant refers to it in his "Tour," only he places it near Camelon, which is evidently a mistake. In the Statistical Account of the parish of Bo'ness, in which Inveravon is situated, the shells are thus referred to :—"A remarkable bed of shells has been long known to exist in the bank near Inveravon. By recent excavations in various parts of the bank, between Inveravon and Kinneil House, the bed appears to be continuous between these two places. It consists chiefly of oyster shells. A species of mussel shell is seen in some places, and one part of the mass is petrified." In a footnote to Stewart's "Caledonia Romana," edition 1851, page 181, the learned editor of that work also says, "In the vicinity of Inveravon, and on a terrace several miles from the sea, a cross road has been cut through a bed of fossil oysters. These are seen on both sides of this inland road in fine preservation. This curious bed is several feet thick, and the oysters were generally closed."

During the month of July last this singular heap of shells was again uncovered, and a fine section of it exposed to view, in consequence of the wall or dyke of one side of the cross road being taken down, in order to be rebuilt. While this was being done, the section was visited and inspected by many persons, among them, I believe, several of the members of this Society, including Mr Anderson, keeper of the Museum. Having made inquiry, I do not find that there is any likelihood of the subject being brought under the notice of the Society by any one else, and I mean, therefore, as being one of those who visited Inveravon, to give a short notice of my observations, as well as also my speculations on the subject.

The section of the bank laid bare by the removal of the dyke extended to about ninety feet—the highest part of the heap being between five



and six feet, tapering to a point at the lowest part of the bank or terrace. The cross road referred to at this part runs about due north and south, and the lengthways direction of the heap (or mound as it is sometimes called) east and west, so that the road completely intersects it. I traced the heap on the west side of the road for seventy yards, and on the east side for ninety yards. As I have already said, the section exposed north and south extends about thirty yards, but how much further north I was unable to ascertain. If, therefore, the statement made in the Statistical Account is to be believed (and there does not seem any reason for doubt), that the heap extends continuously eastward to Kinneil House, which is in this last direction, it would give an aggregate of such an enormous quantity of shells as could hardly be estimated.

The shells forming the section exposed were *not* in their natural bed, but were mixed promiscuously in every position, and none of them were fossil (in the ordinary acceptation of that word), nor were they closed in any instance so far as I observed.

Some other species of shells I found mingled with the oysters, such as varieties of the *Mytilus edulis* (of these a very considerable quantity), *Cardium edule*, *Littorina littorea*, *Solen siliqua*, a portion of *Tapes pullastra*, and a portion of the claw of a small species of crab. It will be observed that these are all edible molluscs.

The oyster shells were generally remarkable for their largeness of size, resembling more the Calais oyster than the Pandore or native oyster of our Forthian coasts of the present day. Many of the mussels were also notable for their size, but more so for the thickness of their nacre and pearly structure.

I have said that these shells do *not* rest on their natural bed, and it may be proper here to say a few words on this point. The late Mr Charles Maclaren, in his work on the "Geology of Fife and the Lothians,"<sup>1</sup> refers to this heap of shells in order to establish what he considered a fact, that the bed of the Forth had risen sixty feet, because he found this oyster scalp (as he considered the heap to be) about forty feet above the present sea level. He argued thus, because the shells "lay conformably, being regularly disposed on their sides resting on one another,"—ergo, it is an oyster scalp *in situ* raised high and dry. Any one, however, who knows

<sup>1</sup> Ed. 1866, p. 317.



about oysters, knows that the oyster lies flat, except when it is adherent to rocks or other substances, and the fact of these being on their sides (as stated) proves them to be disconformable, and therefore *not* in their natural bed. In the section lately exposed, however, the shells were not on their sides as a rule, but were huddled together, as we have already said, promiscuously and in every possible position, the valves of the shells being all single, and not *vis-a-vis* on their hinge, as would have been the case had this been their natural bed.

In a paper read before the Royal Physical Society by the late Alexander Bryson, Esq.,<sup>1</sup> on the question as to the rise of the shores of the Firth of Forth (who took an opposite view to that of Mr Maclaren), he very clearly shows that the oysters at Inveravon were not *in situ*. Mr Bryson says—"Let any one who hears me go to the spot, and he will find no trace of a marine bed below his (Mr Maclaren's) subaërial oyster scalp;" and again, "Had this bed been a pelagic one, as stated erroneously by Mr Maclaren, would we not have expected to find, if it had been rising so rapidly in the world, that it would have left some traces below of its origin? No such trace can be found, but instead a fine deep bed of humus." Mr Bryson then goes on to account for the deposition of the shells at Inveravon by the agency of a high tidal wave. This supposition is, for various reasons, to my mind quite untenable. It is very clear that Mr Bryson had formed a most inadequate and limited view of this immense and far extended mound or heap. He says the oyster shells may be obtained in *cartloads*. If he had said tens of thousands of cartloads he would have been nearer the mark.

He mentions instances of ships, whales, &c, being carried by the waves a long way and deposited high and dry. The action of a high tide in regard to such single objects is quite conceivable, but that the tide should select and arrange such an enormous mass of shells homogeneously (we use the word homogeneously because there is no sand, shingle, rolled stones, or other debris of a sea bottom intermixed) is quite inconceivable, and the idea cannot for a moment be entertained. The ocean never makes a selection when it displays its mighty power in the storm flood—everything is dashed into heterogeneous mixture or into fragments, with but few exceptions. This, then, is not a natural oyster bed, nor have the waves

<sup>1</sup> Proceedings of the Royal Physical Society, vol. iii. p. 278.

had anything to do with its present position—the shells have clearly been placed where they are by human agency. All the evidence points this way.

Intermixed with the shells I found some few streaks of carbonaceous matter, but the quantity was not very considerable. This was chiefly near the bottom, and towards the lower or thin end of the section. Further than this there were no traces of fire, neither did there appear any indications of a hearth or hearth stones. Mr Anderson, indeed, mentioned to me that he observed in the trench dug for the foundation of the dyke, a sort of causeway, the interstices of which were filled with what appeared to be coal culm. This causeway, I regret to say, I did not see, for it had been covered over previous to my first visit; but Mr Deane, the intelligent farmer on whose land these heaps partly repose, informed me that he had seen it, as also had Mr Dawson of Linlithgow and other gentlemen.

He described to me its position, size, appearance, disposition of the stones, and other matters, from which I had no difficulty in concluding, as Mr Anderson had done, that it had formed part of an old Roman road, most likely of the *via* which in all cases ran parallel with, close to, and within the wall. In this case it seems to have done so, if the supposed line of direction of the wall, as generally given, be correct, which was not far from being at this place about east and west—the direction also lengthways, be it remembered, of the oyster heap. The causeway was covered by only a thin layer of shells near the exhausted edge of the heap. The Inveravon oyster heap would thus appear to have extended in line inside the Roman wall. (See sketch on opposite page.)

It is an interesting speculation as to when, how, in what manner, and for what purpose, this vast accumulation of shells had been brought together. I do not intend to express any dogmatic or even very decided opinion on the subject, but simply to offer some suggestions, for it is one of those cases in regard to which nothing is absolutely known or determinately indicated, and therefore it is only permitted to speculate as to probabilities, reasoning from analogous circumstances, or what is obvious from appearances presented. I may premise, that when this oyster heap was lately reopened, I did not see sufficient ground for supposing it to be a kitchen midden, as many people considered it to be, or at least such a one as those commonly found in this country. I am not aware that any bones, pottery,

or other household relics, have been found amongst the shells, at least I could obtain no trace of such, and I therefore objected, perhaps somewhat too hastily, against this designation being applied to the heap, because I now think that, in a certain sense, it may not be altogether inapplicable.

In Denmark, in some islands in the Baltic, and in other parts of Scandinavia, there exist enormous beds or masses of shells of edible molluscs, and which bear indubitable marks of being the refuse heaps of consumed food. Sir Charles Lyell also mentions similar vast accumulations in Georgia and other localities in America, where large mounds of shells had been left by aboriginal tribes of American Indians as the relics of their feasts.



Eye-sketch of Shell-heap, showing its position in relation to the Roman Wall, &c.

A, Inveravon; B, Farm-stead; C, Castle of Inveravon; D D, Shell-heap;  
 E E, Wall removed, showing Section of Shell-heap; F F, Wooded Hill;  
 G H, Road, Boness to Polmont.

In this light, may our mound not be the relics of successive generations of piscivorous people inhabiting this part of the coast? The aboriginal Caledonians were notoriously partial to molluscous food, and the Romans were perfect gourmands in regard to oysters.

The traditions of the people at Inveravon as to these shell-heaps is, that they are the shells of the fish consumed in olden times at the Castle of

Inveravon. A remnant of this castle on an adjoining height overhangs the shell-heaps in shape of a tower, and is erroneously called a Roman tower by Sir Robert Sibbald. There is historical evidence, however, that this castle was, to use a familiar Scottish phrase, 'dung doon' by James the II. of Scotland A.D. 1455. It was built in all likelihood on the site of a Roman fort,<sup>1</sup> for this is just the place where such a fort would be in connection with the last one on the wall to the east at Carriden. A large Roman population would be sure to maintain itself close by; and as we have shown that the heap is within the lines of circumvallation, the Romans were likely either to be the original depositors of the heap, or would, if it had been commenced by the aboriginal natives, add largely to the deposit. In the middle ages, the Lords of Inveravon, and also the neighbouring lairds, such as he of Kinniel, with their dependants, would have their share in increasing the accumulation. In this way, in a certain sense, as I have said, this great heap may be called a kitchen midden.—

It is to be considered, however, that only very little of this vast heap has been explored, and time, which is said to be the discoverer of all things, may yet show that it contains such objects as are commonly found in other Scottish middens, by which its relative antiquity may be determined. But meantime, as already said, we have no data by which to fix the period when these shells were deposited, but I think we may reasonably suppose that it may not have been much earlier (if so early) as the time of the Roman occupation of this part of the country. If we fix it so, therefore, provisionally, may not this heap have been a magazine of material for the purpose of being burnt into lime? This would still leave room to suppose that the contents of the shells were eaten for food. On examination of old Roman bridges or other works, it will be found that the cement was often—I perhaps should say as a rule always—composed of calcined shells. Lime was not used in the construction of the wall of Antoninus, but as we have said, there were various forts<sup>2</sup> and castellæ or watch-towers connected therewith possibly built with lime, not to mention the private dwellings of the Roman colonisers. But it is not necessary to fix a date so early in order to suppose that this heap was an unburnt lime depôt. Shell lime has

<sup>1</sup> These forts were placed along the wall at a distance of about two miles from each other.

<sup>2</sup> There were nineteen on the line of wall, extending over thirty-six miles.



been used continuously in this country for many centuries. Examples will be found in the ancient ecclesiastical buildings of Iona—in the ruins of the border keeps of the middle ages—in our older abbeys and churches; and more than this, shell lime is used in other countries, and even in some of the remoter parts of our own country, at the present day.

To show how ancient and universal the practice of shell-burning for lime prevailed, I shall take the liberty to make an extract of a paper by Mr Earl, read before the Ethnological Society 4th March 1862, relative to the shell mounds of the Malay peninsula:—“These are situated in the province of Wellesley, near the Mudah river. They are about five or six miles from the sea. The mounds, which are entirely composed of cockle shells, are about eighteen or twenty feet in height, and recently have been largely employed by the Chinese immigrants as a source of lime. The antiquity of the mounds must be very great, as shown by the fact that the shells were partly cemented together by crystallized carbonate of lime, the result of the very slow action of atmospheric and aqueous influences. One of these mounds contained 20,000 tons of shells.” These shells were stored up by an almost extinct race of people in very remote times, and there does not seem to be any reason to doubt that the storage was in this case made for the very same purpose to which the shells were being applied by the modern Chinese.

Immense heaps of oyster shells are also found in Corsica, as well as at La Vendee in France, but in these cases the tradition is, that the shells are those of oysters pickled and exported to Rome by the Romans. Knowing as we do what a luxurious people the Romans were, and that they habitually used oysters at their feasts, there is nothing improbable in this story, and if so, they may as well have sent pickled oysters from Inveravon, but the far greater probability certainly is, that the shells in the heap were collected together to make mortar of, after their contents had been eaten on the spot. Another conjecture in the same direction may be hazarded. The land between Inveravon and the shore has been all reclaimed from the sea, and there might have been extensive oyster scalps *in situ* there; it may be therefore, that in clearing the ground for agricultural purposes, as fields are cleared of stones at the present day, a double purpose would thus be served by clearing away the shells and storing them on the heap for mortar.



A remark or two occurs in regard to the mussel shells, which, as I have said, are in considerable quantity, and the nacre or pearly matter in them is very largely developed—several small well-formed pearls having been adherent to some of them, as will be seen from the specimens exhibited. We think it more than likely that these shells had been opened for the purpose of searching for pearls. Suetonius says that the prospect of acquiring pearls was one of the chief inducements of Cæsar to invade Britain; and he even on one occasion dedicated to Venus a breastplate studded with British pearls. Several of the Roman poets celebrate the beauty of the Caledonian pearls—and although it is probable some of these pearls were in ancient as in modern times procured from the freshwater shell the *Anodon*, yet the *Mytilus* would no doubt also contribute a portion—nay the greater portion, because the Romans mostly frequented the coast where the sea mussel was plentiful and more easily obtained.

I submit these views in the meantime, considering, as I have said, that a more full and complete investigation of other portions of this curious and interesting shell-heap may bring to light objects tending either to confirm or confute some of the speculations in these notes, and possibly to settle the questions of its age and origin.

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MONDAY, 9th January 1871.

FRANCIS ABBOTT, Esq., Vice-President, in the Chair.

The Secretary announced that, at a special meeting of Council held this evening, the Council had unanimously elected Miss C. MACLAGAN, Ravenscroft, Stirling, a Lady Associate of the Society.

The Secretary also reported, that the Committee appointed at last meeting on the subject of the preservation of the ruins and monuments of Iona had met, when a correspondence which had taken place between the Duke of Argyll and Mr Skene was submitted to them; and that in the prospect of Mr Skene soon revisiting the island, and obtaining a Report on the state of the ruins, the Committee had adjourned their proceedings.

The following Gentlemen were balloted for, and admitted Fellows of the Society :—

ROBERT ANDERSON, Esq., Architect, Edinburgh.  
 THOMAS GRAHAM BRIGGS, Esq., Farley Hill, Barbadoes.  
 ALEXANDER EDMONSTON, Esq., Publisher, Edinburgh.  
 WILLIAM FRASER FORSYTH, of Denham Green, Esq., Trinity.  
 SAMUEL GORDON, Esq., Stockton-on-Tees.  
 CHARLES JAMES HENDERSON, of Glassingall, Esq., Stirlingshire.  
 GEORGE M. PAUL, Esq., W.S., Edinburgh.  
 Major J. H. M. SHAW STEWART, R.E.  
 ANDREW WYLIE, Esq., Prinlaws, Leslie, Fife.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors :—

(1.) By the Rev. J. M. JOASS, Golspie, Cor. Mem. S.A. Scot.

A Collection of Relics and Animal Remains, from the Broch of Cinn Trölla, Sutherlandshire, obtained for the Rhind Excavation Committee, and comprising :—

Upper Stone of a Quern, 2 feet diameter, slightly hollowed, and having a hole  $1\frac{1}{2}$  inch diameter through the centre.

Under Stone of a Quern, with hollow, measuring 16 inches diameter, and having a hole in the centre about  $1\frac{1}{2}$  inch diameter, and the same in depth.

Upper Stone of a Quern, 14 inches diameter, with central hole  $2\frac{1}{2}$  inches in diameter, and hole for handle.

Upper Stone of a Quern, of oblong form, 18 inches in length, with a central hole 2 inches in diameter, and hole for handle.

Under Stone of a Quern, of oblong form, 18 inches in length, and having a hole in the centre 2 inches in diameter.

Upper and Lower Stones of a Circular Quern, 14 inches diameter.

Oblong rounded Boulder of Red Sandstone, 20 inches by 14 and 13 inches deep, hollowed into a mortar; the hollow is 10 inches by 8 inches and 6 inches in depth, and tapers towards the bottom.

Triangular-shaped Stone, about 15 inches long by 12 inches broad, and the same in depth. It has a circular mortar-like hollow near the corner about 8 inches in diameter, and 6 inches deep.

Large Mortar Stone of Sandstone, with hole worn quite through it, about 10 inches diameter.

Three large Pestles, being oblong beach-rolled stones, about 15 to 20 inches in length, and tapering, from about 6 inches diameter.

Circular Cup of Steatitic Stone, with projecting handle; 5 inches wide and 3 inches high. The bowl-shaped cavity measures  $3\frac{1}{2}$  inches in diameter, and  $2\frac{1}{2}$  inches in depth. The handle is semi-circular,  $2\frac{1}{2}$  inches across, and  $1\frac{1}{2}$  inch in thickness, with a hollow above for convenience of holding it by the pressure of the thumb.

Portions of Three Clay Crucibles, of the common triangular form, and representing vessels of about  $1\frac{1}{2}$  and  $2\frac{1}{2}$  inches in depth. The smaller Crucible has a few grains of melted copper or bronze adherent to its interior surface.

A number of fragments of coarse Pottery, varying from  $\frac{1}{4}$  inch to  $\frac{5}{8}$ ths of an inch in thickness, hand-made, imperfectly fired, the clay being mixed with small stones, and black in the centre, while the outside is of a reddish colour. Some of the fragments indicate vessels of considerable size, and show portions of an everted rim.

Portions of Three Rings or Bracelets of polished Shale or Lignite, most probably from the neighbouring oolite. These rings are slightly oval in section, about  $\frac{1}{4}$  of an inch in thickness, well made, and polished.

Portions of broad flat Rings of Shale unpolished, and rudely formed. These may have been the discs from which the polished rings were cut.

Whorl of Sandstone, 2 inches diameter, and  $\frac{3}{4}$  of an inch in thickness, rubbed smooth, and nicely rounded across the edge. The hole in the centre is not bored but rudely chipped through, contracting from both sides, from a diameter of  $\frac{3}{4}$  of an inch to  $\frac{1}{4}$  of an inch in the centre.

Whorl or Ring of Lead,  $1\frac{3}{4}$  inch in diameter, and having a circular hole an inch in diameter, and somewhat irregularly formed in the centre. It seems to have been tightly fitted on the end of some unevenly formed cylindrical object, probably of wood, which has not passed quite through the hole.

- A Circular Disc of fine-grained Micaceous Sandstone, 3 inches diameter, and  $\frac{3}{8}$  of an inch thick, rubbed smooth on the edges, and highly polished on the two flat surfaces, as if by use as a polisher, the surface being worn slightly concave towards the centre. Possibly it may have been used as a polisher for the manufacture of shale bracelets.
- A Pebble of hard black lustrous stone, about 3 inches long, highly polished over the surface, and used probably as a burnisher.
- Pebble of Quartzite, of oval form,  $3\frac{1}{2}$  inches in length by  $2\frac{1}{4}$  inches in breadth, and  $1\frac{1}{2}$  inch thick, with rounded edges, and slightly flattened on two opposite sides. In the centre of each of its two flattish sides there is a curious depression, where the stone is worn to the depth of nearly a quarter of an inch by the rubbing of some circular body. Possibly it may have been used as a polisher for the outside edges of these shale bracelets.
- Pebble of slightly micaceous sandstone, 6 inches in length and  $1\frac{1}{2}$  inch in diameter, rounded at the ends, and polished on the rounded parts by friction. This also has probably been used in the manufacture of shale rings, or for some similar purpose.
- Four Hammer Stones, oblong pebbles, worn at the ends by use, from 6 to  $3\frac{1}{2}$  inches in length.
- Bone Tool, made from one of the long bones, probably the leg bone, of a horse,  $3\frac{3}{4}$  inches in length, and nearly an inch wide; but brought to a sharp chisel-shaped point, about  $\frac{1}{8}$ th of an inch in width, at one end.
- Portion of a small flat, spatula-like object of polished bone,  $1\frac{1}{2}$  inch in length; in shape not unlike the end of the handle of an old-fashioned teaspoon.
- Portion of Deer's Horn,  $1\frac{1}{2}$  inch in length, sawn across at both ends.
- Tine of a Deer's Horn,  $4\frac{1}{2}$  inches in length, having a hole about  $\frac{1}{4}$ th of an inch in diameter bored through its extremity about  $\frac{1}{4}$ th of an inch from the end where it has been sawn from the horn.
- Tine of a Deer's Horn,  $5\frac{1}{2}$  inches in length, and having a notch near the end, probably the end of a bow.

Disc of Bone, an apophysis of the vertebra of a Cetacean, 3 inches in diameter, and pierced in the centre by a hole  $\frac{1}{4}$ th of an inch in diameter.

Small Iron Knife, 4 inches in length, with tang for insertion in a handle.

Iron Double-edged Dagger-blade,  $8\frac{1}{2}$  inches in length, and  $1\frac{1}{2}$  inch in breadth at the helve, with tang for insertion in handle.

Iron Spear Head (imperfect), 10 inches in length and 2 inches in greatest width, leaf-shaped, and having a well-marked midrib running from socket to point.

Iron socketed Chisel,  $4\frac{1}{2}$  inches in length,  $1\frac{1}{2}$  inch across the broad edge, and having a socket of an inch in diameter—the upper part of the socket, however, is gone.

A large number of the remains of various animals, consisting of :—  
Portions of Antlers of the Reindeer (*Cervus tarandus*).

Many portions of Antlers of the Red Deer (*Cervus elaphus*).

One Antler of the Roebuck (*Cervus capreolus*).

Horn Cores, &c., of the sheep, the goat, and the small ox (*Bos longifrons*).

Skull and Jaw Bones of the Dog, of different sizes, one of large size.

Bones of the Whale and several fishes.

Leg and Wing Bones of the Heron (*Ardea cinerea*).

Vertebra of the Whale hollowed out into a basin-like vessel, the cavity of which is 9 inches diameter and  $4\frac{1}{2}$  inches deep.

Some of these animal remains were, at the request of Dr J. A. Smith, kindly examined and named by Professor Owen and Dr A. Gunther of the British Museum.

(2.) By MILLEN COUGHTREY, Esq., Student in Medicine, University of Edinburgh.

Four long-handled Combs of bone, found in a shell-heap at Hillswick, Shetland, viz. :—

No. 1, which is perfect, 5 inches in length and  $1\frac{1}{2}$  inch across at the bases of the teeth, of which there are ten.



No. 2, imperfect,  $5\frac{1}{2}$  inches in length and  $1\frac{5}{8}$  inch in breadth at the bases of the teeth, of which there have been fourteen, but only four remain. This comb is ornamented with incised lines.

No. 3,  $5\frac{1}{4}$  inches in length and  $1\frac{3}{4}$  inch across the bases of the teeth, of which two remain.

No. 4, which is 6 inches in length and  $1\frac{7}{8}$  inch in breadth at the bases of the teeth, has had 16 teeth, of which only four remain.

A curious punch-like implement of bone,  $2\frac{1}{8}$  inches in length, cut from the end of a leg bone of some small animal.

Two Bone Pins 3 inches in length, and several splinters of bone sharpened at one end.

A large collection of bones of various animals from the kitchen midden at Hillswick, in which the above-mentioned articles were found. [For a detailed description of these, see Mr Coughtrey's paper, read at the following meeting.]

### (3.) By ROBERT HARRIS, Esq., Camphill, Paisley.

A written Ticket of Admission to Twelve Lectures on Experimental Philosophy, delivered at Edinburgh in 1768, by James Ferguson, the Astronomer. The ticket, which is a piece of cardboard  $3\frac{1}{2}$  inches by  $2\frac{1}{2}$  inches, bears in red ink on the top the words, Edinburgh 1768, Fourth Course. Below that, in a circle drawn with a pair of compasses in the centre of the card, are written in black ink the words "Twelve Lectures on Experimental Philosophy, on Mond. Tuesd. Wed. Thursd. and Frid. at 6 o'clock, by James Ferguson." At the bottom of the card in red ink are the words, "To begin on Monday, June 6th." On the back of the ticket is the sketch of a plan for a lunation wheel-work, somewhat roughly done.

### (4.) By The Rev. JAMES M. JOASS, Golspie, Cor. Mem. S.A. Scot.

A MS. Charm to cure the Toothache, written and sold by a professional witch named Kate M'Aulay, residing at Kishorn, Lochcarron, Ross-shire,

in 1855. It is written on a scrap of paper 8 inches long and  $2\frac{1}{2}$  inches in breadth, as follows :—

“Petter was Laying and his head upon a marrable ston weping and Christ came by and said what else (ails) thou Petter Petter answered and sad Lord god my twoth Raise thou Petter and be healed and whosoever shall carry these lines in my name shall never feel the twothick.—Kett McAulay.”

The paper, which was folded small, was worn for at least a year in a small silk bag hung round the neck of a shepherd, who had given half-a-crown to the witch for the charm, which, however, was to lose its efficacy when looked at.

(5.) By ROBERT CARFRAE, Esq., F.S.A. Scot., Curator of the Museum.

Four Roman coins, First brass, viz. :—

As, Moneyer of Augustus, S.C. C. GALLIUS, C.F. LUPERCUS III. VIR  
A.A.A.F.F.

CALIGULA. *Rev.* ADLOCUT. COH. The Emperor haranguing the army.

HADRIAN. *Rev.* P.M. TR. P. COS. III. Female standing.

CRISPINA. *Rev.* CONCORDIA, S.C. Concord seated.

Transactions of the Architectural Institute of Scotland 1863–68.

(6.) By Sir HENRY DRYDEN, Bart., Hon. Mem. S.A. Scot.

Transactions of the Architectural Institute of Scotland, 1869–70.

(7.) By WILLIAM FALCONER, Esq. (the Author).

Dissertation on St Paul's Voyage from Cæsarea to Puteoli. London.  
8vo. 1870.

(8.) By J. R. M'LUCKIE, Esq., Falkirk.

Account of Arthur's Oon. Compiled by John Reddoch M'Luckie.  
8vo. 1870.

(9.) By A. FITZ-GIBBON, Esq.

Unpublished Geraldine Documents. Dublin. 8vo. 1870.

(10.) By Lieut.-Col. W. ROSS KING, F.S.A. Scot. (the Author).

The Aboriginal Tribes of the Nilgiri Hills. 8vo. 1870.

(11.) By the CAMBRIAN ARCHEOLOGICAL ASSOCIATION.

The Lordship of Gower. Parts I., II., and III. 8vo.

(12.) By the CAMBRIAN ARCHEOLOGICAL SOCIETY.

Archæologia Cambrensis. Fourth Series, Nos. 3 and 4.

(13.) By the ASSOCIATED ARCHITECTURAL SOCIETIES.

The Reports of the Societies.

(14.) By the Right Honourable the EARL OF DALHOUSIE.

Rubbing Stone of Red Sandstone, measuring 2 feet 3 inches by 1 foot 8 inches, which formed part of the bottom of a short cist at Fallaws, containing an urn and flint chips. (See communication by Mr Jervise, Vol. VIII. p. 166.)

(15.) By the Rev. JAMES G. YOUNG, Monifieth, through James Neish, Esq., F.S.A. Scot.

Sculptured Stone found in digging a well in a cottage garden at Monifieth. This stone is figured in "The Sculptured Stones of Scotland" (Spalding Club), vol. ii., plate cxxiii.

(16.) By the HERITORS OF MONIFIETH PARISH, through James Neish, Esq., F.S.A. Scot.

Three Sculptured Stones from the church of Monifieth. They are figured in the "Sculptured Stones of Scotland," vol. ii. plates lxxx., lxxxi., and xcii. (See subsequent communication by Mr Neish.)

The following Communications were read :—

## I.

NOTICE OF THE EXCAVATION OF THE PICTISH TOWERS AT CINN-TRÖLLA, CARNLIATH, AND CRAIG-CARRIL IN SUTHERLAND, WITH NOTES ON NEIGHBOURING BROCHS; AND AN APPENDED REPORT BY T. AITKEN, M.D., F.A.S.L., INVERNESS, ON THE CRANIA FOUND IN AND ABOUT THEM. BY THE REV. J. M. JOASS, GOLSPIE, CORR. MEM. S.A. SCOT. (With Plans, Drawings, and Photographs.)

[This paper is reserved for publication in Vol. V. of the "Archæologia Scotica," and will be given after the paper by George Petrie, Esq., Kirkwall, Cor. Mem. S.A. Scot., entitled :—

NOTICE OF THE BROCHS OR ROUND TOWERS OF ORKNEY, WITH PLANS, SECTIONS, AND DRAWINGS, AND TABLES OF MEASUREMENTS OF ORKNEY AND SHETLAND BROCHS. BY GEORGE PETRIE, ESQ., KIRKWALL, CORR. MEM. S.A. SCOT., F.R.S.N.A.

This paper was read on the 11th June 1866, and, from its being reserved for publication in the "Archæologia," the title of it was accidentally omitted from the Report of the Meeting published in the Proceedings, vol. vi. p. 442.]

## II.

OBSERVATIONS ON THE VALUE OF RUBBINGS IN THE PREPARATION OF MONUMENTAL DRAWINGS (ILLUSTRATED BY DRAWINGS, RUBBINGS OF SLABS, ROCK-SCULPTURE, ETC.) BY CAPTAIN T. P. WHITE, R.E.

The question I propose to discuss in this paper, is the value of really good rubbings in preparing monumental drawings of flat slabs, such as those most frequently found throughout Scotland, this issue having been distinctly raised on the occasion of our last meeting, in a paper by one of the members.

Before doing so, however, I must ask your indulgence on a somewhat more personal matter. Those who were present at that meeting are aware

that certain criticisms were passed upon a set of drawings illustrative of Saddell Abbey, contained in the last volume of our printed Proceedings. With one or two exceptions, these drawings, as was distinctly stated, were produced from rubbings, that is to say, they were the best interpretations that I was able to make of those rubbings, without a second visit to the spot. My object is to have the most perfect drawing that can be obtained, and, so far as the criticisms were correct, I have to record my obligations to the gentleman who made them. It need hardly be said that any one whose first object is not *truth*, should have no title to call himself a working member of a scientific body. But there are various degrees of truth, short of absolute perfection, with which we have to put up, through want of time, means, and opportunity; and work may be very good work, without being what it very rarely is, altogether unassailable. That is my general reply to the charges of inaccuracy.

Having had an opportunity since last meeting of revisiting Saddell, and making all necessary corrections in the drawings, the members of the Society will at a glance recognise the trifling extent of the alterations, by comparing the corrected drawings with the prints from the originals. (The corrected drawings were exhibited).<sup>1</sup>

I may add respecting Saddell, that, after the publication of the first drawings, I became aware of a certain unsatisfactoriness in them, due to over-sharpness of the outlines, which failed to render the softening effects of age and weather. These defects I have endeavoured to rectify in subsequent drawings, as will be seen from specimens now exhibited. Having to revisit Saddell, I had long contemplated taking that opportunity of testing my first efforts, and at the same time completing our collection of mediæval monuments there. Both these objects have now been carried out, and drawings of the whole of the monuments, numbering eleven, have been obtained.

<sup>1</sup> I need not go through the details *seriatim* as it was necessary to do at the meeting. The principal points under criticism were the blending of a hand and trefoil on a shield in one of the rubbings, causing them to look like an animal's stump—the crossing of the legs in a Christ's figure from a similar slight misreading, and in an effigy much foreshortened, which I sketched, the omission of a spear from its being merely indicated by an incisure, and not relieved like the rest of the figure. There were a few other small items objected to, mere matters of individual interpretation, in respect of which I am unable to agree with the objector.



I pass now to the consideration of the more general issue, namely, the value of rubbings in the preparation of monumental drawings; and let me at once say that, in my opinion, one of the briefest and best observations I could make to you on the subject would be,—look round this room at these specimens of rubbed tracings from different parts of Scotland (upwards of fifty of which were exhibited) and settle the question for yourselves. Are not these tracings pictures in themselves, and must not drawings rigidly copied from them, just as they stand, retain, to a large extent, their verisimilitude and pictorial character?<sup>1</sup> It is this value, strengthened by an after touching of the drawing on the spot, which I wish to compare with the value of unassisted free-hand sketching. Let it first be clearly understood to what class of objects I refer in instituting this comparison. Any flat surface of a hard material, stone for example, with incised spaces carved on it, will give a paper impression by means of rubbing with grass, kail, or other vegetable matter, better, I think, than with heel-ball, or black composition. But it is essential that the carved work should be upon a flat ground, with simple hollows cut into it. There must be no attempt to represent rounded forms by convexities or concavities. Everything pictorial must be restricted to outlines, depending for their ornamental effect upon harmonious grouping, assisted by vertical relief, so as to form one flush surface. Now these are precisely the conditions which obtain on flat tombstones, bare sculptured rocks, &c., but especially in the mediæval slabs of this class, and in monumental brasses. Mr Pugin, a very high authority on such matters, particularly calls attention to the peculiar characteristics of Gothic panel-work, eulogising the chasteness of this class of ornamentation in contrast with the debased style of florid roundness which was prevalent elsewhere. As an example of what I mean, look at the chalices on the drawings now shown. A real goblet seen sideways is of course round; yet on the stone it is represented by a flat surface, not a hemisphere—a profile outline, in fact, projected into a horizontal plane. An exception to this is met with in the effigies brought up into higher relief, and for that reason I do not consider such monuments fit subjects

<sup>1</sup> The same may be said of a photograph, supposing photography were applied at once to the rubbing. But then, we should still have only a negative representation entailing additional expense in its production.

for rubbing. They fall properly within the domain of hand-sketching. Again, observe in all the slabs with ornamental foliage how every leaf is essentially a flat surface, with no other ornament but incised outlines. Knot-work, figures of animals, figures of men, sword handles, galleys, and so on, all are expressed by the chisel cutting perpendicularly down into the surface of the stone, and leaving a sharp edge. The only roundness, then, we need look for in these stones is in the edges of the incisures, which, after a lapse of time, will naturally get worn down, more or less according to the exposure. Another exception to this rule, is in the beadings and, to some extent, in the larger figures of ecclesiastics cut in low relief. Sometimes, as was the case with a superb ornamental slab at Killeen, which my assistant, I believe, was the first to discover, and trace for me,—a stone is hidden away from exposure to weather and ill-usage; and thus the lines come out as fresh and sharp almost as if cut yesterday. The wonderful symmetry of the thread-like incisures, the faultlessness of every spiral sweep, speak for themselves in the rubbing. Conceive an artist refusing a perfect reduction from this slab to shade in, and setting to work instead to draw it free-hand in expectation of arriving at the same accuracy! Let him try to copy with scientific exactitude such a slab as the tombstone of the four Priors at Iona, or the wonderful rock-sculpture exhibited in the next room. Or, again, such labyrinthine carvings as we find depicted upon some of the eastern pillar-stones given in the Spalding Club's magnificent work!

I think, then, it must be clear, that the usual type of western ornamental slab is peculiarly adapted for copying by the rubbing process. I say nothing here about paper or plaster casts, which, of course, while having certain advantages over rubbings, require, I imagine, more time and trouble in their preparation.

The next question is this: Given a really good rubbing, carefully taken, what is likely to be its maximum faultiness, and from what causes? My answer is, that a good rubbing will be an almost perfect reprint of the stone, not merely giving all the outlines of the figuring in exact drawing, but reproducing every chip and crack in the upper surface of that figuring. It will be, in fact, like a life-size photograph, only often supplying much more than a photograph could do. Every little turn and twist, every minute deviation from uniformity in the pattern, every break in the

edges, comes out clear and life-like ; but always, of course, like the photographic negative, light in the hollows or shadowed portions, and dark on the upper surfaces. On the other hand, the worn roundness of edges, and any weather marks within the hollows, will escape the rubbing. But there is another property of the rubbing upon which I wish to lay particular stress, in contrast with what free-hand drawing can attain to. This is, that in much obliterated slabs the rubbing will search out and record far *more* than the eye can possibly see on the slab *in situ*, at any stage of the sunlight, producing, so to speak, a resuscitation of what once was visible, but is so no longer. The reason of this doubtless is, that it may be often simply impossible to clear off a recumbent slab every lichen-stain, discoloration, or particle of dirt ; and thus, when the edges of the design have sustained extreme attrition, the shadows which originally marked out the pattern become blurred or blotted out, and fail to convey to the eye the real spirit and meaning of the original sculpture. It was thus that the Saddell drawings showed more freshness of detail than is apparent on the ground. Often have I been struck with this peculiarity, this revivifying power in the rubbing. A notable instance is the ancient cross at Sanda Island. It will be seen what the rubbing shows which has been reproduced in my drawing. I stayed two or three hours in the afternoon on the island, and saw the stone most of the time. Yet not the faintest indication of the various interlaced patterns—not even the divisions into panelling, except to a very slight extent, could be detected by the eye. This example particularly impressed me, as I had in my hand the pencilled reduction, and was quite taken aback to find no sign of the ornamentation visible beyond the holes of the cross-head. I have also here another fragment on which one can make out a pattern of linked circles and beautiful underlying plaitwork, that must have been very elaborate. Now the surface of this stone is so unmarked to the eye, that after minutely examining it, and finding only a tiny hole here and there, I was obliged to rub it before I could decide if it was mediæval or not. Could there be a more striking proof of the power of the rubbing ? Or, again, look at this elegant slab at Saddell ; one of those I formerly described as having on it a single sword, with the surrounding tracery nearly defaced. The rubbing tells a different story, for it shows us, with a sufficient clearness, the whole intention, character, and detail of

the carving, almost as if we had seen it when freshly cut. Viewing the stone you can just make out the sword, all else being "a mass of indistinctness." Yet how the cross and pedestal have come out underneath the sword, and what sharp, graceful lines the foliage assumes on the rubbing! In the drawing, it is clear I must represent more than I *saw* on the stone, or else I shall be untrue to the life and spirit which, though hidden to the eye, still animate the sculpture.

Rapidity of execution is another great point in favour of rubbing. Those three specimens I took myself in half an hour. How long would an artist be in doing justice to free-hand drawings of them? Of course my particular duties, which take me constantly through the localities where the rubbings were made, give great facilities for revisiting the ground, and touching in the reduced copies. So far I have endeavoured to show that, intrinsically, the rubbing must possess, in some respects, superior qualities of accuracy, and in many cases be a fuller record of the sculpture than the best unaided drawing can be. The next question is, how to utilise the rubbing for purposes of general illustration.

If I have established the high value of a good rubbing in itself, or of a photograph taken from it,—that which shall substitute for the negative representation a positive one with light and shade, in their proper relative places, must surely be an advance upon either. So that, if a draftsman sits down with a reduced pencilled copy of one of these rubbings, and simply effects the substitution I speak of, he must come a step nearer the end aimed at, namely, a perfect representation. Indeed, where the details of the rubbing are all obviously complete and intelligible, if he stopped there, and never revisited the ground at all, there would still undeniably be a drawing of a very high value to the historian, the archæologist, and the artist.

But I admit at once the desirability of touching up and perfecting the reduction on the spot. And when this is done, what unprejudiced person can doubt that the result must be a nearer approximation to the truth than the free-hand work of the same draftsman? Put into the hands of an artist the skeleton imprint or fac-simile of that stone's sculptured surface for him to work upon, and you give him half the battle at once, and much more than half. Free-hand drawing has its proper sphere, without undertaking too much. Glance at some of the more elaborate specimens



of slab carving, and imagine what it would be to draw in by hand the multiplicity and extreme intricacy of detail here pictured ! What would be the chances of getting into accurate position every touch and curve of a leaf or twist of a stem, or the endless ramifications of that running knot, or of that other interlaced wheel ? Might not a crack be left out here, a chip there, and so on ? Could every part of the carving be expected to appear in the unerringly true proportion given by the rubbing ? Impossible, I say. You might set fifty draftsmen opposite that rock-sculpture to sketch it free-hand, and not one of them would turn out the same drawing as any other.

This, then, is the position I hope I have succeeded in establishing.—(1.) That the monumental sculptured slab of the class generally found in the West Highlands is peculiarly suited for copying by the rubbing process. (2.) That in point of outline accuracy such copies, and the drawings resulting therefrom, must more or less, according to the intricacy of the sculpture, surpass anything the free-hand sketcher can attain to. (3.) That in slabs much worn down, more detail oftentimes is caught and printed off in this way than is visible to the naked eye ; and (4.) and lastly, That a mechanically reduced pencil copy of such a rubbing, placed in the hands of a draftsman to touch in afterwards on the ground, should, without sacrificing pictorial effect, be a more scientifically valuable illustration of the slab than a mere free-hand sketch by the same draftsman could be. But let me not be misunderstood. By “scientifically valuable,” I mean valuable for the purposes of the historian and archæologist, that being undoubtedly the primary requirement. The artistic excellence of the drawings is for such purposes another but clearly a secondary matter. Were the point of issue one of pure art, the mechanism must at once be thrown aside. If we wanted simply a charmingly executed picture and nothing else, then, of course, considerations of what constitute artistic merit proper would come uppermost, which would alter the case entirely. Personal skill, the individual mind of the artist, and such like qualities, would immediately affect the question. But it is just these personalities or idiosyncrasies that we are not to recognise here ; that, indeed, it is desirable to eliminate, except so far as they may serve in the capacity of handmaids to the strict object in view,—that object being, I take it, to bring the nearest thing to the slab itself, with its collection of facts before



us, on the paper. Yet by all means having secured this first desideratum, superadd all the personal artistic embellishments in your power. And I see no reason why, when viewed simply as pictorial results, without reference to the means employed in their production, drawings fortified by rubbings should not reach the highest degree of excellence.<sup>1</sup>

I had hoped to say something more than time permits me to do upon the subjects delineated on these slab-rubbings, some of which are very peculiar and interesting. These are only a few selected from our collection; and want of space unfortunately has prevented my exhibiting more than one of the fourteen groups of archaic rock sculptures which we have obtained from the neighbourhood of Lochgilphead. This, however, is the largest (though some of the others are not much smaller), and I have nearly finished a drawing on a large scale from it, produced by the same system as the slab illustrations. Others are in hand, so that I hope shortly to have the whole series completed. The camera could, I think, be brought to bear on these rock-rubbings with great effect, but with this drawback, that the natural cracks and strata marks of the rock are not very readily distinguishable from the artificial carvings till you go to the ground. Among the slabs will be observed two rare specimens, one with the figure of a mythic-looking animal, something like a camel, having a horn protruding from its back, the other showing side by side with a knight a figure in what resembles a page's costume of the fifteenth century. There are also some uncommon types of circular ornamentation; two or three

<sup>1</sup> Since reading the paper before the Society, I have slightly altered this sentence, that my meaning may be clearer, which is to distinguish between *subjective* and *objective* value respectively in a picture, a point Mr Ruskin has argued in all its bearings. For instance, a photozincograph or other good print from a beautiful hand-etching might be such a fac-simile of the original as to reproduce all its artistic freedom and beauty, yet as a work of art be inadmissible. Why inadmissible? Simply because the subjective quality is wanting in the print, though its objective value as a result is quite equal to that of the original. In fact, the actual amount of difficulty experienced in producing a drawing is an element of art-value, since it implies more or less skill and power for its subjugation. But still, from what has been said, it will be seen that, even to take the artist on his own ground, drawings on my plan may possess every subjective art-requirement save in one respect only, the outlining; while the attempt to satisfy this requirement by free-hand would only involve the sacrifice of other and yet more essential art-qualities, such as accuracy and correct proportion. Thus, from the most rigidly artistic platform my *modus operandi* is about quits with hand-sketching.

antique styles of cross ; a great variety of sword patterns ; and in this fragment from the north-west, an archer drawing his bow, who is attired in what, most of anything I have yet seen upon these monuments, resembles the genuine kilt. Another is a specimen from Lochgoilhead, unique in my experience, as illustrating the transition from the beautifully ornate style of early monumental art to the pretentious ugliness of the later Post-Reformation tombstone. With the ancient type of knot-work, you will see associated such emblems of handicraft as the pick, woodman's axe, &c. ; also a human arm with open hand, an animal, an inscription bearing the name "M'Ivar," and the tell-tale date 1591, all cut in bold and uniform relief ; while scribbled over the axe are the traces of a later appropriation of the stone, in the name "Robert M'Farlin" and date 1697.

Of the slab-rubbings in the room (I think there are some fifty), a good many have been already drawn, and the results I hope shortly to have an opportunity of bringing before you ; and I am in hopes the work will proceed as time permits towards some sort of comprehensive illustration of Western Scottish monumental art.

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Mr James Drummond, R.S.A., before reading the annexed remarks on the same subject,—the value of Rubbings as compared with Drawings, observed that the remarks in Captain White's communications principally resulted from some strictures made by him at last meeting of the Society, upon the incorrectness of representation in the illustrations to a "Notice of Saddell Abbey, Kintyre," printed in the Transactions, and Captain White having this evening shown his original drawings for that paper, since then corrected by comparison with the antiquities themselves, and altered in almost every particular to which objection had been taken, thus showing that the criticisms were just and called for. He expressed surprise that his remarks the other evening should have been construed into anything of a personal nature. There was no such intention on his part, seeing that he put the blame of inaccuracy on the fact that the drawings had been done from rubbings, which was the argument used for their accuracy. On that occasion he had stated that it seemed to him impossible to make correct drawings from rubbings of anything having an irregularly raised surface, and that the drawings under consideration were an illustration of this :—

*On the Value of Rubbings as compared with Drawings.*—There are two classes of Rubbings,—one from an object having a slightly raised surface, such as the crosses and memorial slabs in the West Highlands; the other from a smooth surface, having a design of some sort incised or engraved upon it, as seen on the monumental brasses so common in England, and of which only a very few remain in Scotland. Rubbings from these latter may be done on a light paper, with a black substance, in which case the engraved lines of the original come out of the colour of the paper; or on a dark paper, with a light material, when the result will nearly be a fac-simile of the original. These may be used to make drawings from at any time, with perfect safety. Rubbings of the former kind, from an uneven surface, are of an entirely different character, suggestive and useful, giving an admirable idea of the general style of design and ornamentation, of length, breadth, and all that sort of thing; but there it ends, for unfortunately everything on the surface comes up in a rubbing, with an unnatural distinctness, while all the delicate gradation of the sculpturing, the depth of the carving, or the nature of it, are entirely wanting, and then the more weather-worn the original, the worse the rubbing; valuable they are as reference, dangerous as illustrations. To make correct drawings from such it is quite impossible, the only safety being in a careful comparison with and correction from the original, and even then it must occasionally be bewildering, from what was told us the other evening as a recommendation, that objects sometimes came out in the rubbing the meaning or form of which could not be deciphered with the naked eye. This seems to me one of the greatest dangers of the system, for we all know how easily the most acute may be deceived by such markings, which in the majority of cases must be caused, in most stones, by weathering, or perhaps by having been, at some time or other, injudiciously scraped or tampered with in attempting to make out some delicately sculptured ornamentation; and it is curious, but true, that shadows of this sort will gradually, in one's mind, assume a sort of shape, and once there, nothing can efface the impression, and so they are drawn. To correct such drawings from the originals in a proper spirit, I should suppose would require a good deal of manipulative skill, and a knowledge of drawing sufficient to make the copy entirely from the originals themselves; and I can assure any one who has the power to do this, and yet submits

to the uninteresting mechanical labour of such a process, that he is depriving himself of one of the greatest pleasures in hunting up these interesting relics of what we almost feel to be a forgotten art, a sort of indescribable sensation, as if the design were growing under your hand, the very difficulty of making out often giving an increased zest to the pleasure of the pursuit. In addition to all, there must be a great saving of time in doing them from the stones themselves; of course, if time was no object, it would be the last of my thoughts to find fault with any one having recourse to mechanical means if he preferred it.

It has often occurred to myself, and no doubt to others, that approximate date might be got at, from the nature and form of the symbols sculptured upon these monuments, locality certainly. Galleys, for instance, are a good illustration, some having the sails and rigging arranged after a particular fashion, others having an animal of some sort at the prow, occasionally at both stern and prow; then we have a pennon or a shield of arms, each variety more common to some localities than others.

The sword also varies according to the locality. At Kilmichael-Glassary they differ from what we find at Kilmartin, and at Strachur they are different from the specimens at Knapdale. At Iona alone have you much variety both in these and the build of the galleys. In some districts you have deer-stalking hinted at by finding deer pursued by hounds; again is represented a dog after a hare, pointing to coursing; the otter and salmon, indicating salmon fishing and otter hunting. Only one object the same everywhere, the womanly symbol, the shears. In a paper which I read to this Society two years ago, I drew special attention to a marked peculiarity in the effigies of the Highland chiefs—viz., that in the very great majority of cases they were armed with a spear in addition to the sword, in those represented as standing in a niche or riding on horseback almost invariably so. This is quite peculiar to the West Highlands. The form of the dress or armour is also puzzling, so unlike what we find in other countries, the surcoat of cloth or leather seemingly quilted in long regular folds, while it is held close to the arms by what seems to be two iron or steel bands, one above, the other below the elbow; the mode of belting on the sword is also singular. All these should be noted down with great exactness, if such are to be of any historical value.

That, however, which I have always thought would help us to date more



certainly than anything sculptured upon these West Highland monuments, is the figure of Christ upon the cross. At first nothing seems to have been attempted beyond the head, and perhaps the shoulders of the Saviour, being thus represented on the shaft of a cross still remaining at the ancient burying ground of Kilavon, Loch Fyne. In the earliest examples of those having the full figure, there were four nails, one for each hand and one for each foot, the feet being separate, and the figure fully draped. The next stage seems to have been a diminution of the drapery, the feet still separate; then came the feet nailed together, and in the latest examples, the drapery was reduced to little more than a slight covering for the loins. I mention these particulars for the consideration of all interested in such matters, to show the necessity of accurate observation and representation, —if by drawings, it signifies not how roughly or rudely, only let them be correct as to fact; a few lines will sometimes convey a peculiarity as clearly as the most elaborate study.

### III.

NOTE OF A DONATION OF FOUR SCULPTURED STONES FROM MONIFIETH, FORFARSHIRE. BY JAMES NEISH, OF THE LAWS, ESQ., F.S.A. SCOT. (PLATES IV.—VI.)

The sculptured stones of Monifieth, which have been portrayed in the Spalding Club volumes, having been transferred to the National Museum of Antiquities, Edinburgh, it seems desirable to repeat in the Proceedings of the Society of Antiquaries any authentic information that has been handed down to us concerning the ancient history of the locality with which they have been so long connected. The name of the parish has been variously spelled, Monifuit, Monefut, Monifod, Monifuith, Monifieth. The church dedicated to Saint Regulus<sup>1</sup> was in the diocese of Saint Andrews, is situated on the bank of the estuary of the Tay, within sight of the ancient city of Saint Andrews, the tower of Saint Regulus there forming a striking object in the distant view. The kirk of Monifieth was given to the Abbey of Aberbrothoc by Gilchrist, Earl of Angus, dur-

<sup>1</sup> The Edinburgh Almanack of 1706 gives Truel Fair as held at Kirkton of Monifieth.



ing the reign of William the Lion, about 1207. Malcolm, the fifth Earl, grandson of Gilchrist, gave the abthane lands of Monifieth to Nicolas, son of a priest of Kirriemuir, in 1220. About 1242, his daughter Maud, Countess of Angus, confirmed a grant to the Abbey of Aberbrothoe of certain lands south of the church of Monifieth, which the "Keledei" held in the lifetime of her father, with the toft and croft on the east of said church. That is the only evidence preserved to us of a Culdee establishment having existed at Monifieth. The church, which was taken down in 1812, had existed from before the Reformation. When the present church was erected, the foundation was laid at a depth of 10 feet, through accumulated, rich, black soil, mixed with human bones. One skeleton was found entire, which had been laid on its back.

The largest of the sculptured stones is of shaft-like form,<sup>1</sup> and must have been discovered at an early period, for it had been converted into a lintel for the "Queer" door of the pre-Reformation church; it was afterwards, with two more, built into the walls of the present church. They were removed in order that both sides might be copied by the artist for the Spalding Club, and are now presented by the Heritors of Monifieth to the Museum of the Society of Antiquaries, Edinburgh, for preservation.

In 1864, when Messrs Cosmo Innes, Joseph Robertson, and John Stuart visited Monifieth, to inspect those stones, the proprietor of a cottage adjoining the church, hearing of their object, sent to the Rev. James G. Young, minister of the parish, the fourth sculptured fragment,<sup>2</sup> which had been found when a well was being dug in his garden. Mr Young has kindly allowed this stone to be transferred to the Museum, along with the other three, and it is now presented with them to the Museum of the Society. (See Donation List, p. 59.)

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[The larger fragment, which is of reddish stone, 4 feet long, is part of the shaft of a cross, presenting on one face the lower portion of a crucifixion, with a figure standing on each side. Beneath this there are two compartments, each containing two figures apparently of ecclesiastics, and below them a third, containing a man seated, and playing on a harp. The other face of the shaft and the two edges are sculptured with knotwork.

<sup>1</sup> Sculptured Stones of Scotland, vol. i. p. 29, plate xcii.; vol. ii. p. 41, plates lxxx., lxxxii.

<sup>2</sup> Ibid., vol. ii. plate cxxiii.





SCULPTURED STONES FROM MONIFIETH FORTARSHIRE.  
(Now in the Museum.)

The other two stones are smaller, and of a greyish sandstone. The larger is 3 feet in length, by 14 inches in breadth ; the smaller only 17 inches in length, and 10 inches broad. They are sculptured on both faces, having an interlaced cross on the one face, and figures and symbols on the other, as shown in Plate IV., where careful drawings are given of both sides of the two stones.

The first mentioned of these is remarkable in having the "spectacle ornament" twice repeated in close juxta-position (See fig. 1, Plate IV.), first presenting the ornament alone, and again in conjunction with the Z-shaped appendage, or "zig-zag" or "sceptre ornament" so often associated with it. The middle of the stone is disfigured by a groove, coarsely cut when the stone had been made use of for building purposes. At one side is a well-carved representation of a double-edged comb of the usual early form, made of small pieces of bone enclosed between two slips running along the centre, and rivetted together with bronze or iron rivets. Towards the bottom, and partially broken away, are the remains of what was in all probability a circular mirror, which often accompanies the comb on these stones.

On the reverse side (see Plate IV., fig. 2) is a cross ornamented with a species of fret-work.

The second of the two smaller stones bears a cross on one of its faces of similar form to the last, but differing considerably in its ornamentation, (see fig. 3, Plate IV.), which combines the interlaced work so common on these monuments with the fret and the scroll-like work styled "Late Celtic." On the other side (see Plate IV. fig. 4), the stone is divided into three compartments. The upper and larger of the three is filled in with bird's heads depending from the two upper corners, over a nondescript monster with a long neck, and the detached head apparently of a hound. In one of the lower compartments is a human figure clad in a loose robe folded closely round the body and reaching to the feet. On the breast appears a circular object, and a nimbus surrounds the head. In the third compartment is the "crescent symbol" conjoined with the V-shaped appendage or "sceptre" usually combined with it.

The fourth fragment has been part of a large slab. It measures  $3 \times 2\frac{1}{2}$  feet, and has a sculptured cross (?) having on one side a wheel-like or floriated pattern running down the centre, flanked by sculpturings of



beasts of various forms. The sculpture on this side, which is in relief, is now almost entirely defaced. On the other side the sculptures consist entirely of representations of various animals. Some of these are in relief, and others merely incised.

#### FIGURES FROM SCULPTURED STONES IN SCOTLAND.

The stones above mentioned, which have now been presented to the Museum, display several examples of a class of peculiar sculptures occurring frequently on rude stone monuments, and rarely on objects of metal (Plate V. fig. 6), which are principally or almost entirely to be found in the north-eastern districts of Scotland. The same patterns of sculptures occur again and again with different degrees of ornamentation and grouping. Some of these stones have been described and figured by various authors, as well as in our "*Archæologia Scotica*," vol. ii. p. 314, and vol. iv. p. 345, but most fully in Dr John Stuart's important work on the "*Sculptured Stones of Scotland*," published for the Spalding Club. The peculiar character of these sculptures has not, however, been noticed in our "*Proceedings*," and we take the opportunity of giving here a series of figures of the more important ones copied from Dr Stuart's work. (See Plates V. and VI.)

Trivial names have been given to these sculptured figures according to their shape or fancied resemblance to some common or well-known object, and they have been believed by some antiquaries to be "Symbols" of a mysterious character, the meaning of which is probably still to be discovered.

In the accompanying plates the symbols of most common occurrence on the sculptured stones are represented, and a detailed list of these is here given in the order of their frequency of occurrence on these monumental stones:—

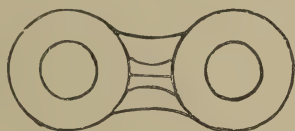
1. The symbol of most frequent occurrence is the "Crescent" (Plate V. fig. 1). It presents many varieties of ornamentation, and is always accompanied by the V-shaped sceptre. It occurs on 30 of the pillar-stones and 23 crosses.

2. The next symbol in point of frequency is the "Spectacle Ornament" (Plates V. fig. 2, and VI. fig. 6), of which there are upwards of 30 varieties figured in Dr Stuart's book. This ornament has very frequently

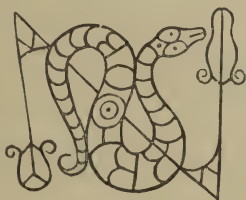




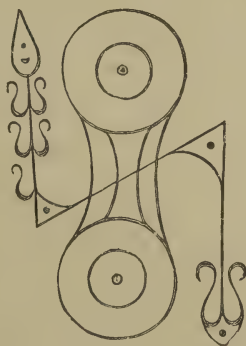
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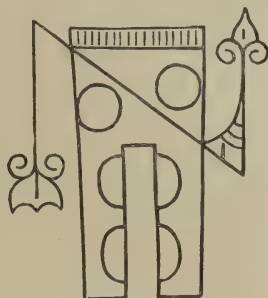
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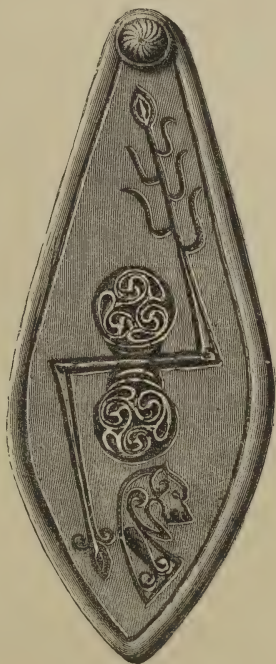
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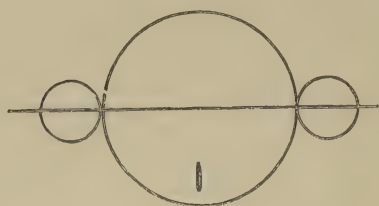
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FIGURES ON SCULPTURED STONES—SCOTLAND.

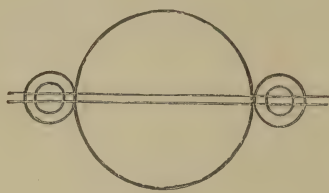
1. Crescent with V shaped Sceptre. 2. Spectacle Ornament. 3. Serpent with Zig-Zag or bent sceptre. 4. Spectacle ornament with do. 5. Oblong Monument with do. 6. Silver plate from Norrie's Law, with Spectacle Ornament and Dog's Head.



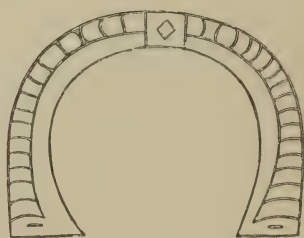




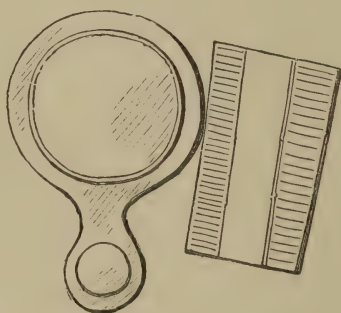
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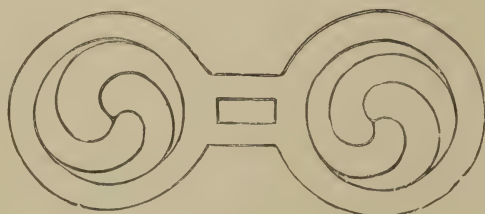
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FIGURES ON SCULPTURED STONES—SCOTLAND.

1 and 2. Fibula-like figures. 3. Arch. 4. Mirror and Comb. 5. Mirror and Case. 6. Spectacle Ornament with spiral scrolls. 7. Elephant.

passing through it a figure resembling the letter Z, generally more or less ornamented; it has been designated the Z-shaped or zig-zag ornament or "bent sceptre." See Plate V. figs. 4, and 6. It occurs on 23 of the pillar-stones and 19 crosses.

3. The "Mirror," which sometimes occurs singly, and at other times in conjunction with the comb (Plate VI. figs. 4 and 5). The mirror occurs on 23 pillar-stones and 14 crosses, and in 18 cases it is conjoined with the comb on the same monument.

4. The "Elephant" (Plate VI. fig. 7), which occurs on 13 pillar-stones and 19 crosses. "While other animals (says Dr. Stuart), including the camel, are represented in various and natural attitudes, this creature appears only in one; and while attempts are made to imitate the wool of the sheep, the plumage of a bird, or the scales of a fish, the 'elephant' is covered with the ornamental patterns which occur on the crosses in our MSS., metal work and other *inanimate* objects. It may thus be supposed that the 'elephant' was copied from *an object* which had come to be a badge."

5. The "Comb" (Plate VI. fig. 4), of which 13 occur on pillar-stones and 8 on crosses.

6. The "Serpent," which sometimes appears alone and at other times as in the figure in the plate from the stone at Newton (Plate V. fig. 3), combined with the zig-zag or "bent sceptre;" occurs 4 times on pillar-stones and 9 times on crosses.

7. The "Horse-Shoe" figure or arch (Plate VI. fig. 3) occurs on 10 pillar-stones and 1 cross.

8. The "Fibula-like" figures (Plate VI. figs. 1 and 2) occur 5 times on pillar-stones and 4 times on crosses.

9. The "Oblong Ornament" (Plate V. fig. 5) occurs 9 times, 6 being on pillar-stones and 3 on crosses. It is often also combined with the Z ornament, as in Plate V. fig. 5.

10. The "Dog's Head" (Plate V. fig. 6).

There are, besides these, various peculiar figures or symbols sculptured on these ancient stones, which have not been even referred to here, and the whole subject invites further examination and elucidation.

In Dr Stuart's "Sculptured Stones" notices of these stones and sculptures by early historians are pointed out. Hector Boece, in the



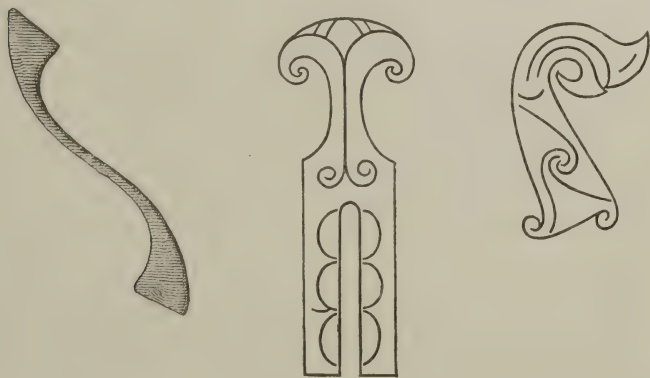
"Chronicles of Scotland," states, that on the ancient monuments of noble men "was ingravin imageris of dragonis, wolfis, and other beistis; for no inventioun of letteris was in thay dayis to put the deidis of nobil men in memore." He also states, in his "New Maneris and the Auld of the Scottis," that the old inhabitants "usit the ritis and maneris of the Egyptianis," not writing with common letters, but with "sifars and figuris of beasts made in manner of letteris, sic as their epithafis and superscription above their sepulturis schawis." Other old authors have repeated the same story. Cordiner, in his "Remarkable Ruins," figures and explains a number of these monuments with reference to the Egyptian hieroglyphics. Boece in his History, and Gordon in his "Itinerarium," suppose many of them to be Danish, but Worsaae considers that there is no authority for this opinion.

Some antiquaries have supposed these sculptures to be of pagan origin, and the Christian emblem of the cross, which occurs combined with them on some of the stones, to be of a more recent date,—an appropriation of the pagan monument by the later Christian people. Others have fancied they might, perhaps, be simply early Christian sculptures; and others again have made various suggestions attributing to the symbols mysterious and occult meanings which it is needless to specify.

In the preface to the "Sculptured Stones of Scotland," however, Dr John Stuart, after adverting to the usage so prominent among early races of representing by symbols on their tombs the occupation and rank of the person commemorated, and to the general custom of burying with the dead the objects used and loved by them during life, and when this usage ceased, of representing such objects on their tombs, is inclined to believe that these unknown symbols represented objects not dissimilar in character from the mirror, comb, and shears,—that is, articles of personal use or ornament. He also extends this conclusion to the other figures which occur on the monuments, such as the "elephant" and the "horse-shoe figure," the "oblong figure," and "the crescent," and points out that the "bent sceptre," which never appears alone, seems from various details, such as the strengthening at the angles, &c., to be a piece of mechanism for attaching the objects with which it is figured to something else. "If therefore," he adds, "we should be led to regard the 'spectacles,' 'horse shoe,' 'oblong figure,' serpent and crescent as figures of

personal ornaments of various kinds, the so-called 'sceptres' may be held either to be parts of such ornaments, or to represent the contrivance by which they were fixed to the person. If these can be held to be of the nature of clasps, brooches, and objects of personal use, their occurrence among other recognised sepulchral symbols, sculptured on tombstones, may be regarded as a mere variety of the idea which led to the frequent deposit of these objects in early graves, in conformity with the statement of Mr Didron, that after the custom had been abandoned of burying them with the dead they still continued to be represented upon the tombs." . . . "The conclusion at which I arrive," says Dr Stuart, "is that the symbols—the comb, mirror, books, brooches, 'spectacles,' 'crescents,' and associated figures, were all objects of personal ornament or use, and that when they appear on our pillar-stones they are to be regarded as symbols representing the dignity, office, or descent of individuals."

Dr Stuart considers, from the harmony of style between the ornamental details of these stones, and many Irish manuscripts of the 7th, 8th, and 9th centuries, that these monuments are not later, probably, than this period.—Eds.



Additional Figures or Symbols on some of the Sculptured Stones of Scotland.

MONDAY, 13th February 1871.

JOHN ALEXANDER SMITH, M.D., Vice-President, in the Chair.

The following gentlemen were balloted for, and admitted Fellows of the Society :—

The Most Hon. the MARQUESS OF LoTHIAN.

Right Hon. LORD ROLLO.

JOHN T. ABBOTT, Esq., Abbeville, Darlington.

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THOMAS DISHINGTON, Esq., Trinity.

The Rev. GEORGE GRUB, Dundee.

HUGH S. JAMES, Esq., of Martnham.

WILLIAM EDWARD WILLIAMS, Esq., Architect, Hackney, London.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors :—

1. By GIDEON SCOTT, Esq., Hindhope, through ROBERT MERCER of Scotsbank, Esq., F.S.A. Scot.

Three-legged Pot of bronze, 8 inches high, having a long, nearly straight, handle attached to one side. The handle (which is broken) is ornamented on the upper surface by two concentric circles, each surrounding a central dot. This ornament is twice repeated on the portion of the handle that remains attached to the pot. It was found during the summer of 1870 while draining the Pot Loch on the estate of Scotsbank, Selkirkshire.

A Stone Ball about  $2\frac{1}{2}$  inches diameter, found at Dodhead on the same estate.

The Bowl of a small Clay Pipe,  $1\frac{1}{2}$  inch in length, having a mark impressed upon the projection of the lower part of the bowl resembling a castle, and on either side the letters P.C. It was found at Hindhope, also on the estate of Scotsbank, Selkirkshire.

2. By WILLIAM WATSON CAMPBELL, M.D., through Sir WALTER ELLIOT, K.S.I., of Wolfelee, F.S.A. Scot.

A Celt of whitish coloured sandstone, 12 inches in length and  $3\frac{1}{2}$  in

greatest breadth, polished towards the cutting edge, and tapering to a blunt round point at the opposite end. It was found in a field on the farm of Windshiel, near Dunse.

3. By W. STEVENSON, Esq., through Sir WALTER ELLIOT, K.S.I., of Wolfelee, F.S.A. Scot.

Bronze Palstave,  $5\frac{1}{2}$  inches in length and 2 inches broad at the widest part above the rounded cutting edge. The flanges converge considerably, and there is a slight stop ridge. It was found in the same field with the stone celt above mentioned on the farm of Windshiel, near Dunse.

4. By JOHN JEFFREY, Esq., Banker, Dunbar.

Object of polished serpentine,  $2\frac{1}{2}$  inches long by 2 inches broad, and  $2\frac{1}{2}$  inches high, of square form in the lower part, and rounded above, with a small hole through the upper part. It has been roughly hollowed out, and the interior is considerably blackened. It was found under 3 feet of clay, near Broxmouth Ward, Dunbar.

5. By DAVID GRIEVE, Esq., F.S.A. Scot.

MS. Deed of Legitimation in favour of James Abernethy, son of Alexander Abernethy of Netherdale (having the Great Seal of Queen Mary attached), 4th March 1568.

6. By Provost DAWSON, F.S.A. Scot., Linlithgow.

Plaster Cast (large medallion), 18 inches diameter, bearing Bust in high relief, and inscribed ALEXANDER, found in the ceiling of an attic room in "Cornwall's Lodgings," Linlithgow.

7. By LAWSON TAIT, Esq., Surgeon, Wakefield.

Pair of Handeuffs, which were in use in Dornoch Jail before 1745.

8. By Sir W. STIRLING MAXWELL, Bart., through WILLIAM FRASER, Esq., F.S.A. Scot., the Editor.

Memoirs of the Maxwells of Pollok. By WILLIAM FRASER. 2 vols. Edin. 1863. 4to.

9. By THOMAS STRETTON, M.D., the Author.

The Celtic Origin of a great part of the Greek and Latin Languages, &c. By THOMAS STRETTON, M.D. Pp. 100. Edin. 1870. 8vo.

10. By the LORDS COMMISSIONERS of H.M. TREASURY, through The Right Hon. Sir W. GIBSON-CRAIG, Bart., Lord Clerk Register for Scotland, Hon. Member S.A. Scot.

Documents Illustrative of the History of Scotland, from the Death of King Alexander the Third to the Accession of Robert Bruce, 1286-1306. Published by Authority of the Lords Commissioners of Her Majesty's Treasury, under the direction of the Lord Clerk Register of Scotland. Two vols. Edin. 1870. 8vo.

11. By the Rev. JAMES RUST, M.A., Minister of Slains, the Author.

Druidism Exhumed, in two parts. "Part I. Proving that the Stone Circles of Britain were Druidical Temples, being an analysis and refutation of the Treatises on 'Stone Circles' in the late Spalding Club's 'Sculptured Stones of Scotland.' Part II. Containing other important Collateral Archæological matter." Edin. 1870. 8vo.

There were exhibited

1. By Major CHADWICK, Moy House, Forres.

A Necklace of upwards of 200 beads of a uniform dull yellowish colour. The beads varied slightly in size from  $\frac{3}{8}$  to  $\frac{1}{4}$  inch in diameter. They were found in the sand, at the base of one of the sand hills on the coast of Morayshire, at Culbin. A smaller ribbed bead of dark coloured glass was also found at the same time.

Professor Cosmo Innes read from a letter received from Major Chadwick a short account of the manner in which they were found by him and his gamekeeper, being accidentally turned up by the foot at the base of one of these sand hills.

Professor Innes also read a letter from the Rev. Dr Gordon, of Birnie, describing ancient glass manufactories, traces of which have been found at several places in the neighbourhood of Elgin.

Dr J. A. Smith said the circumstance of so many beads of one kind—about 250 he believed in all—having been found together, evidently forming a necklace, was very rare in this country. No beads exactly similar



to those now exhibited by Major Chadwick were recorded as occurring in Scotland, though similar ones were figured as having been found in Switzerland.

At Dr Smith's request, Dr Stevenson Macadam had made an analysis of these beads, and he informed him that "the beads were composed of glass coloured with oxide of iron." Their dull appearance was due, he was inclined to consider, to the weathering of the surface, and the beads were exceedingly brittle from a similar cause. The broken bead showed the vitreous lustre on its fractured surface. He did not think they were of native manufacture, but were probably introduced by the early commerce with the Continent.

The Society was much indebted to Major Chadwick for exhibiting this interesting necklace, and he hoped that he might see it right to present it to the Society's National Museum, which was the proper repository for all the rarer objects of antiquity found in our country.

[It will be seen from the Donation List of the next meeting that Major Chadwick has handsomely presented one half of the beads to the Society's Museum.]

The following Communications were read :—

## I.

DESCRIPTIVE LIST OF ANTIQUITIES NEAR LOCH ETIVE, ARGYLLSHIRE, CONSISTING OF VITRIFIED FORTS, CAIRNS, CIRCLES, CRANNOGS, ETC.; WITH SOME REMARKS ON THE GROWTH OF PEAT. BY R. ANGUS SMITH, Esq., Ph.D., F.R.S., ETC. (PLATES VII.-XII.) PART I.

When seeking rest at Oban in 1867, I was advised to visit the vitrified fort Dun mhic Uisneachan,<sup>1</sup> let us say, Dun MacUisneachan; it is frequently called there, Beregonium.

As a chemist I felt curious concerning such forts, but had seen only the little one in Bute. I soon came to the conclusion that Dunmacsniochan, as the people call it more usually, had been a very important

<sup>1</sup> The use of this exact grammatical *mhic* does not seem agreeable to the habits of the people in this case. May the name not be used without offence as Macuisneachan, a common way of using *Muc*?

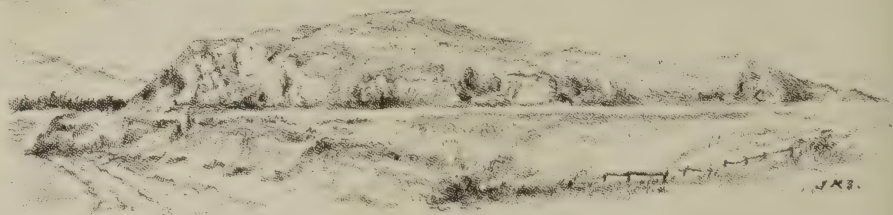
place. It was easy to conclude that it had been a fort or defence against men, and not against the elements or wild animals only, and, if so, there must have been a population either near to it or able easily to approach it. The place was wild, but from it there was a view remarkably beautiful on a clear day—really one of the very finest views in Scotland. There seemed a fine taste in the choice of place, but the cultivation was slight. Where was the food for a large population? The remains of an old St Columba church stood in a cemetery near, and at the side of it, in a cave, Mr John Campbell, who lives close to it, found an old urn called of the Celtic type, but very rude. Pagans as well as Christians had certainly dwelt around the place in old times. Surely something must be left behind. So I determined to seek an opportunity of remaining in the neighbourhood. This did not occur until last year (1869).

I knew nothing of Scottish antiquities, and had never even seen a cairn. I cannot, therefore, give you any important views on any point. I have seen museums here, and in France, Germany, Switzerland, Denmark, and Sweden, but have learnt that neither books nor museums sharpen the eye so much as actual inquiry on the ground to be examined.

On consideration there were reasons for expecting remains other than those appearing at the fort. The district had been viewed as important, Dunstaffnage was opposite, about two miles across the water; that had been held up as the chief cradle of the Scottish monarchy, and until Mr Skene showed otherwise, the place of deposit of the coronation stone. I did not know until lately that the vitrified fort had been fancied as a palace of Fergus, and by others as the seat of Fingal. The traditions, the histories, and the fancies would be most interesting to examine, even if nothing remained true, but I purpose here to give only a short catalogue of the things distinctly visible which seemed to me connected with the ancient population, not even attempting a detailed description, but under the impression that I am doing some small service by making a list, if I do nothing more.

The greater part of the places to be spoken of are mentioned already in several works, but I do not know of any account which shows intimate knowledge of the district.





*Dun Mac Uisneachan from the shore S.W. fancifully called  
Beregonium, castle of Fergus and Selma.*



*Dun Bhaile an Righ or Dun Valanree -  
extremity of Ledaig.*

Whilst I may be found to say a good deal of that which may be seen elsewhere, I imagine that in most, if not in all, cases I am able to make an addition of some small circumstance, rumour, or notion, which may hereafter be of use. Even if this were not the case, a mere juxtaposition of the whole will be of value, as Dr Stuart pointed out to me. To do this is small enough work, but it satisfied the curiosity of a holiday, and it may be useful to others. At another time I may be able to increase it.

The district in which Dun Macuisneachan stands is between two lochs—Creran and Etive. It is almost inaccessible except by water, and no doubt was once quite so, except to the best Highland feet. It was therefore a safe point of settlement for any one coming from the sea,—safer than Dunstaffnage, although not so convenient for attacks inland. The range of vision is great, extending seaward to Colonsay, and embracing capes and islands between, giving an aspect, as it were, of a bay, narrow, but forty miles in length.

The Dun is an isolated rock (see Plate VII.), one end rugged and washed by the sea; the other, inland, is lower; of clay slate and conglomerate. The highest point is 150 feet above the sea. It is divided into two very distinct parts, that next the sea being largest and highest. There is a depression between, and in the depression a small elevation. The vitrified walls surround both divisions; the largest shows a covered wall with the end exposed about 6 feet high and 4 feet broad. I did not measure it; it was difficult to do so, as the grass has overgrown nearly all, and it is at almost all points in appearance a mere elongated mound, the end sharply cut down. The exposed part looks, however, more like a portion of a regular wall than those I have since seen elsewhere, and it seems surprising that its object could be doubted by any one.

The vitrification has penetrated to the centre, yet I did not see in any parts pieces of charcoal, although there were marks on one place which resembled the impression made by burnt wood. It was easy to trace the wall, although covered with grass, and but little raised above the rest of the turf. Everywhere, when the turf was removed, the vitrified masses appeared. A large quantity had fallen down the precipitous sides, and from that portion specimens were generally taken by tourists. It has been supposed that the fusion of the stones of the vitrified forts was too



difficult to believe possible. This is not so, and many of them are very easily melted. Basalt is rather a mixed rock, but it generally contains a very decided amount of soda and potash—five to six per cent., besides lime and iron, making above twenty per cent. of bases, which melt with silica, or form a kind of glass.

This part is reasoned out beautifully by Mr Keddie, in his paper to the Philosophical Society of Glasgow. I do not know if I can add anything whatever useful.

I had some pieces from Dunagoil, in Bute, and examined the melted and unmelted portion to see if there was a difference in the amount of alkali. It seemed to me that, no matter what the rock was, enough of the surface would be melted by the alkali of the wood ashes to cause cohesion, and that where much of the ash happened to fall, a considerable amount of the silica would melt. And this really occurs, as sandstone itself is seen imbedded in the wall at Dun Mac Uisneachan, bent, beginning to yield; and this would not be caused by heat solely.

I am not pleased with the analyses made in my laboratory, although some weeks were spent on them. Still I give the average result. It would require much labour to finish the subject.

	Oxide of Iron.	Lime.	Magnesia.	Potash.	Soda.
Superficial and } Fused Part, }	15.55	5.45	2.85	2.03	2.2.
Altogether, 28 per cent. of base.					

Across the enclosure are lines on the grass not easily seen in all states of the sky, but certainly in existence, indicating walls covered over with turf. It seems as if an inner enclosure had been formed, perhaps apartments for dwellings. No one has made any examination of this, and I thought it well not to do so without permission (now obtained).

That an inner series of buildings should be expected, is natural, and especially after reading the careful work of Mr Williams, and the latest, and by far the clearest, account of vitrified forts by Dr Stuart. We incline to ask if these buildings were of perishable material? On the smaller part of the fort there is a large number of loose stones. They are not at all likely to have been there naturally, but were almost certainly taken up to the hill, and they are probably the remains of dwell-

ings. Greater quantities may exist under the turf of the larger hill, as the grass is abundant, and the soil probably so also.

To illustrate the probability of this. On the vitrified fort at Knockfarrel there is decidedly a quadrangle with a double wall. It is not large, but it may be one of many once existing. I do not see clearly from his writings that Mr Williams examined it, although of all early writers on these forts he was the one with the greatest common sense.

On the outside of the southern wall at Dun-Mac Uisneachan, and in a rock at a precipitous spot, is a well—at least it is an opening called a well. It is a hole in which there is usually water. From its shape we might suppose it to be artificial, but no marks of tools were observed. The back part of the well is about six or seven feet above the water—the front less than two. It is full of loose stones. The fact of water being there in dry weather points to a spring, very unlikely on such a rock. But this ought to be examined. An old inhabitant of the neighbourhood, Duncan Stewart, says he remembers when the hole was deepened. He adds also that his father told him that, when a boy, he used to throw down stones, and wonder at the length of time they took to fall. This indicates a considerable depth, and would be very strange. It shows, however, a want of water above, whereas now the water is at the top; but its origin is not ascertained. It may be simple enough, and only collected from the ground above the well. (I have since found the well to be only  $5\frac{1}{2}$  feet deep, and to be supplied through a crack in the rock by the fort drainage, yet the delusion as to its depth has lasted a century).

That wells existed in these forts is known, and they ought in all cases to be looked for. At Noath there is one—the depth I do not find. Some of the stones had been taken out lately; but as sheep fell into it the shepherds filled it up, and this year when I saw it it was again full of large stones. We could not wonder at the presence of water there, as the surface of the Noath fort itself would collect a good deal, and the well was about the centre. At Knockfarrel there is a deep depression beside the four-sided one; it may turn out to have been a well.

Mr Williams mentions a lesser enclosure by the side of the greater in some of these forts. This of Benderloch<sup>1</sup> has the two very clearly divided,

<sup>1</sup> Benderloch is the district between Creran and Etive, and is a Gaelic contraction meaning “between the lochs.”

but, singularly, there are the remains of a stone boulder circle within the smaller. There are, besides, many more of the loose stones in this smaller division, such as we may suppose to have formed dwellings. I was told that many had been removed to build houses below. Between the two parts of the hill there is a projecting rock not very prominent; it has a great mass of vitrified matter on its summit. This projection is rather more noticeable from below, although the vitrified character cannot be seen at a distance. There is no appearance of an enclosure in this part, and it gives one the idea of a tower, the chief value of which was its elevation, and, connected with this, suggesting the use of this part for a beacon.

The idea that all vitrified forts were beacons has arisen in some minds, probably when they saw only such small specimens at those at the greater Cumbræ, or at Dunagoil, in Bute. The existence of forts does not oppose the existence of vitrification by beacons, and we may consider such a result almost necessary when the nature of the ground allowed—for example, amongst loose and fusible stones; but such vitrification could exist only to a small extent, since the fuel would be placed uppermost, and the stones not exposed to the greatest heat of the fire.

Nobody seems to have examined Dun Macuisneachan carefully, and no utensils have been found except, I believe, a quern.

In the depression between the two divisions of the rock, and at the south side, the most convenient entrance exists. We see distinctly the remains on the turf of a zig-zag road; five of the angles may be observed. If this place is ever examined, great care must be taken not to destroy its present appearance. This road is called Queen Street, or Sraid a Bhan Rìgh. It would be interesting to learn the age of the name. It is, probably, a modern caricature; nicknames and fancy names abound there.

The raised beach along the shore to the south is natural; but it is said to have had a different appearance formerly, having had artificial work upon it. The field along the fort and shore was covered with peat. This was removed. Duncan Stewart, who was ploughing on the spot afterwards, was interrupted by great stones, which he thinks must have been 12 feet long. One of these he broke up. The others, which did not so much interfere with the plough, were allowed to lie. He thinks they are about 60 feet to the south of the standing-stone in the middle of the

field. Still the memory may not be exact, as he says he remembers three standing-stones. Pennant says there were two, and he would probably be correct on that point, although his observations on this place are, on the whole, very absurd. This field, as well as the circle and enclosures above, will probably give something new to inquirers, if any portion will.

The standing-stone gives one an idea of great age. It is a piece of conglomerate, with the connecting aluminous metamorphic rock a good deal washed out, whilst the hard old pebbles that it had embedded remain. There are no artificial markings but one, and that is a hole little more than an inch deep, as if made not very long ago. Its edges have none of the appearance of being weather-worn like the rest of the pillar. The reason of the stone looking so worn may be that it has been under peat. The acid of the peat may have attacked the fusible portion. It has a destructive power on mineral bases, as well as a preserving power for some organic substances. Stones here in their natural position—that is, projections of rocks—do not show this excessively worn condition so much. We know well how much peat acid clears off the iron from clays and from stones. Still no consequent whiteness was seen here.

In examining such places, we feel quite satisfied with the authenticity of some names, but we hesitate at others. No man will probably doubt the name Dun Mac Uisneachan, or Dun Mac Sniochan, being genuine tradition. Celtic scholars have heard of the sons of Usnoth, we are told that their names are connected with several places around. Neither do we doubt the name of the prominent rock which stands near, and forms the extremity of the hill of Ledaig, threatening to fall on the post-office and the old burial place. It is called Dun Valanree (see Plate VII.), to write it phonetically, or Dan Bhaile an righ, the fort of the king's town; at the foot of this the urn was found (see Plate X.) This points to the time when a chief lived at the fort. A well is found on this hill also; it has been imagined to communicate with that on Dun Mac Uisneachan, but I saw no reason for thinking so. The story of wooden water-pipes leading to the well in the fort has grown uncertain, requiring corroboration. It has not become stronger by turning the pipes into lead, according to the tale of an old man there who says he remembers them, but he is not old enough to have seen what he fancies. (This account of the pipes and the supply of the well in the field may now be called a delu-



sion. It was dissipated by measuring the depth of the well, and finding the origin of the water).

The name Market Street and Meal Street—Sraid a Mhargaid and Sraid a Mhin—are suspicious. However, we must not be too suspicious. We have learned to believe in enormous antiquity for some things, and we have learned, on the other side, to look on the most ancient habits brought down actually to our own days—the use of flint and bone instruments for example. As to tradition, I met an old acquaintance on the Oban steamer who told me that he was much surprised, when the Dean of Lismore's book was published, to find one of the longest poems almost word for word the same as that which an old woman had taught him as a child near Dalmally.

We must learn to believe a great deal, as there is very much to be known. There seem, however, to be no traditions regarding Dun Mac Uisneachan, except the story that everybody tells you of six kings having lived there, and of its having been burnt.

The burning is, probably, a fabrication caused by observing the vitrification ; so may the kings be. We do not hear of six sons of Usnoth or Uisneach.

If we look at the surroundings we see evidence of population, and of some care. The fact of a Christian church being built, and leaving the name of Cill or Kills, is an evidence of its being an eligible spot for meeting the people. The burial-ground, too, must have been very large, as bones were taken up when cutting the road past the smithy. The burial-ground extended to the rocks that form the shore. The old or Celtic burials were made near the spot, as the urn Mr Campbell found in the cave in his garden proves. A cairn with many urns was disturbed when making the road into the schoolhouse. That the Christian burials might have been numerous, we can imagine from the place being rendered sacred by the church. Very probably it was a sacred place for the population previously ; a place of meeting it naturally was from the configuration of the land.

Passing it eastwards, we see a standing stone close to the so-called Meal Street. It looks like a remnant of a stone circle. On the road to Loch Creran, at the right hand, there is a hole containing many large stones, the remains of a stone circle. Near to it the circle is visible when



the corn is beginning to become yellow; there being probably more moisture in it, vegetation remains longer green. Still curiously, the circle is seen once a year for a week or two marked on the crops.

As we pass on to Loch Creran, turning to the left, and in the fields south of Barcaldine old castle, two circles are seen in ruins, each of them being double, and one with an enclosure not quite square (Plate XI.) Old stones, once evidently standing, now fallen, are seen. One was to be raised up again by a farmer who had taken an interest in it. Near Barcaldine is a mound called Tom Ossian, or the Mound of Ossian. This does not appear to me artificial, although there seems a considerable difficulty in telling what elevations here are so. Several run in a straight line, and would seem to have in some parts been raised as a line of defence, but they adjoin natural lines not unlike them, so that great care only could separate the two classes. It is a habit of the people here to give to many grave-mounds the name of Ossian. It implies that the place covers, in their belief, one of the great ancients. In this case it is said to be the place where Ossian sat, according to the second legend mentioned in the Statistical Report. Towards Loch Linnhe there are other cairns marked in the Marine Ordnance Map, one has been very large at Ach na monadh.

The district between Lochs Creran and Etive is called Benderloch. It is divided into two by the long hill Ledaig, called in the marine map Ben-Lora. I am told this name is old, although it sounds as if taken from later times. So complete is the division, that it was difficult to find room for even a road between the precipitous rock and the shore. The fort is on the northern division, but near the southern, and so that it stands at the same distance from Loch Etive as from that part of Loch Linnhe looking to Lismore, and nearly the same to Loch Creran. It is situated on the shore of a fine bay called Lochnell, a modern name from the house of the proprietor. The marine map puts down the few houses behind The Dun as Selma, and another a little off as New Selma. This is rather a pity, as the name is said to have been given only towards the end of last century by one of the Campbells of Lochnell. If given at all, it could only be applicable to the fort; because Selma means a fine view, whereas behind the fort the view is entirely obstructed. It is well not to mix the certain with the uncertain. On Sir John Sinclair's map, as

on the marine map, the hill is called Lora; and on the former the moss towards Etive is the Heath of Lora, and the Falls of Connel are called the Falls of Lora. We cannot object to any individual taking this view of the subject, but an official document would require to be more carefully handled. On the other hand, it might be said that new names must be employed, if used generally by the people, whatever their origin may be; this general use is not found here.

As we go south, along the raised beach of Connell Bay, the moss under the hill is seen. Querns have been taken from it, but I have not heard of anything else at that spot. On the western side of the road, and south of the Clachan of Ledaig, a gravel mound was opened this summer, and about two feet below the surface was a stone coffin. For rudeness or simplicity I have seen nothing equal to it described. It was only about two feet long, made with the smaller boulder pebbles abundant there. The interior resembled a section of an egg lengthways. Over it were two pieces of the clay slate of the hills. No human remains were found, and no charcoal. It was apparently quite out of the confines of Christian burial, and I can only imagine that, at a time when only the chief people were buried formally under cairns or great stone structures, some mother had determined that her child also should have a similar honour, and put up this small imitation to its memory. Yet these may be found common, and my ignorance may cause these fancies. I went a week or two afterwards in order to have a drawing made, but the place was too much disturbed. It could be built in half an hour, and a minute could destroy it.

#### AGE AND GROWTH OF PEAT.

Near the point where we now are, the road divides into two. One line goes straight forward to Connel Ferry, the other leads along the hill-side to Ardechattan, up the Etive. The plain between this and the loch is a moss called by Dr Wilson the Black Moss. On pages 91 and 106 of his "Pre-Historic Scotland" he says that stones showing the action of fire have been found, along with stakes, which seem to indicate circular dwellings. He adds that they are under eight or ten feet of moss, under which is a foot of soil, before coming to the gravel on which the cairns of the neighbourhood rest. This, he considers, indicates a

period before the Romans. I suppose the question of the age of peat is quite unsettled. I am inclined to believe that a moss may be very old, or comparatively recent. We scarcely give the peat-moss fair play, although in this case I do think the lower moss, being very black, must be old.

When thinking of this subject, I turned to the "Handwörterbuch der Chemie," and found opinions there which it may be interesting to quote. An analysis by Liebig of a Lemna from a peat-moss in Switzerland is given, and his remark is mentioned, that the water in which it grew contained all the ingredients required for feeding it; it is inferred that one can easily understand why peat should grow, under such circumstances, on the most barren ground. When discussing the time required to grow, it is said that between Olehing and Loehausen, near Munich, a surface of peat was burnt, and after sixteen years there was a depth of seven inches above the burnt part. In Erdinger Moss, in Bavaria, three feet of turf is found made in old cut-out beds. The newer turf is coarser than the old. "In Langmoos an old road is covered  $1\frac{1}{4}$  feet." "If the growth of turf is carefully attended to, it may become of great value." Sprengel says that, "under favourable circumstances, a peat-moss (torf-moor) will produce more combustible matter than the best forest." In "Liebig's Agricultural Chemistry," he shows that wood and meadow-land grow remarkably near the same amount of dry woody fibre—about one and a fifth ton per annum per acre. If we suppose an acre of ground to be covered with solid fir wood an inch thick, it would weigh about fifty-five tons; and growing one and a fifth ton per annum, it would require forty-five years. Considering the rapidity of growth of surface-plants on some peat bogs, we cannot suppose it less rapid, when not removed by cattle or otherwise.

Now, as peat will hold something like eighty per cent. of water, or even more, we may fairly allow in the same time five inches of peat to have grown, considered roughly, equal to one of wood. On the other hand, we know that grass and other plants may be stimulated, so that several crops may be obtained in the year, and, under favourable circumstances, let us say three. We might thus have in some places five, and in others fifteen, inches of soft peat in forty-five years, according as the peat plants were well fed.

We must divide the peat into two classes, some purposes require more — the fibrous, which is fresh or not very old, and the amorphous. The rapid growth can apply to the first only ; the true black peat burning with much flame is much older, and we cannot yet calculate the time for its formation. In order to form it, a decay goes on which consists of oxidation of the carbon mainly, whilst the hydrogen compounds remain, and proportionately increase. The carbonaceous bodies are carried away in considerable quantities in the brown water. This lost quantity is not easily calculated. Some peat water has two grains of organic matter in it, some less than one. If we supposed one grain per gallon, and 36 inches of rainfall, we should require to subtract 115 lbs., or about 1 cwt. per acre every year, and with 72 inches twice as much for removal by water. When the peat is fibrous there is no decay perceptible, and the growth might be taken without deduction. In some cases the plants remain nearly fresh, I believe, for centuries. In a lake dwelling of which I am going to speak, the plants below the hearth-stone and the floor appeared only slightly yellow.

Still the decay is needful for the conversion to true peat. If the plant is well protected from air, and from flowing water containing air, its change may be arrested completely. A certain openness of structure is needful for the formation of true black peat.

I need not speak of the matter excepting in relation to the subject of antiquities. If these notions are correct, we may have from 10 inches to 30 inches of open fibrous peat in a century, according to the nature of the water supplying the moss. If the supply of water is abundant and easy, and if the water itself is well supplied with earthy salts, we can see no necessary limit to the depth which the peat may attain during long ages. If there be a plain, and if the plants are obliged to obtain their inorganic salts by capillary attraction or osmose, or by the dialytic action of the peat, then a natural limit must take place. It will not be a sharp line, but the early peat will grow very fast, and the later slowly, until it ceases to increase in depth. We must, therefore, judge very differently of different mosses. One may have remained of the same thickness for an indefinitely long time, being as thick in much of the prehistoric as in historic days ; another may have grown about two feet in a century. This latter, however, will not in all probability have attained the black stage







*Lake dwelling at Ledaig (Conna Ferry) the long line is the  
border of the old lake - The view towards Loch Awe with the  
beginning of Cruachan on the left.*



*Great Cairn at Achnacridhe (Achnacree)*

at which the richer hydrogen compounds are found. At present we have no guide to the length of time required for this stage.

When people speak of the age of peat as being excessively great, they ought to mention the quality of peat. If black, we may allow at present very great antiquity until we learn better. If covered over from air we may allow a great age, even to fibrous peat. If otherwise, there seems no necessity for speaking of a very great age.

By following up this inquiry, which I know to be imperfect, but new at least to me, we may arrive at some more definite ideas. As an extreme one I may consider that less than a century cannot be allowed to thirty inches of fibrous peat, and that where water is very pure and the supply of salts obtained by dialysis only, the probability is that one foot in a century is plenty for moderately soft peat. But when the moss is deep and dialysis has a great distance to act, growth may stop entirely. In seeking to grow turf it seems important not to cut down to the soil. The peat grows best on a portion of its kind. This is to be observed abundantly in places where part of the ground has been left bare and part covered. It is rather remarkable that in questioning Mr Mc'Gregor (the ground officer at Lochanabeich), his opinion came out that it would take about fifty years to grow a foot under favourable circumstances such as he had seen. If these ideas are correct we may gain by the manuring of peat, if it is ever much required in the arts. As a scientific experiment, at any rate, it is well worth attending to.

As to peat obtaining its inorganic constituents from rain, I think it improbable, as in that case there is no limit to its possible thickness, whereas the thick deposits are all in low places, in hollows of hills, where superficial sources of the salts are more readily found.

#### LAKE-DWELLINGS.

Mr Campbell, of the post office, Ledaig, told me that when a boy he remembered seeing something like bones on or in the peat moss, near the meeting of the roads from Connel Ferry and Achnachree. He waded through a swamp to a dry place, and there he supposed a burial-ground existed. I went with him over the now pretty dry grass, and we dug with a knife, finding a few bones, large nuts and shells, also a whitish substance that looked like peat ashes (see Plate VIII).

About one hundred and twenty years ago a company from England engaged in working iron had diverted a stream from this to the east, and made dry ground where was a lake. Mr Campbell even recollected that some twenty-five to thirty years ago, some of the land was badly drained : his wading shows it. This led me to think that not a burial-ground but a lake-dwelling was to be had in mind. Soon afterwards I made fuller search.

The space that called forth interest was scarcely distinguishable from the rest of the moss. A little attention, however, showed a depression. The whole was of a brownish-green colour, but in the middle of the depression, where had been the old lake, there was a part greener than the rest. It was of an oval form about fifty feet long, and twenty-eight broad. The outer part had a double row of turfs as if two walls had existed. I expected piles at these places, but the whole was soft and consisted of turf only. On digging down about three-and-a-half feet, we came to wood, consisting of young trees from six to eight inches in diameter, lying packed closely together. Under these there was another larger layer crossing, and under these again more. There seemed four all along the building. This was opened in three parts, Mr Hosack of Barcaldine, &c., being present. In these three parts the same layers of wood were seen. It would seem as if the trees were laid down layer after layer until a solid stratum was formed. No piles were seen, but the ground was purposely left little disturbed, as I wished a few others to be present at the full uncovering, especially as I was a novice in these matters. There were many leaves, half rotten, and a few branches. The young trees had been felled with sharp axes. There was none of the clumsiness of the stone age. The encircling mounds were but a few inches high, but they showed organic matter decaying and turned into peat. It seemed as if a double wall of wattles had existed, or at least peat or perhaps turf. I saw no proof of clay to fill up the chinks : the Highlanders do not object to chinks even now.

The wood was birch. On the moss there is a lake called Lochan-a-beich or beith, which is explained as the "Lake of the birches."

There are no trees that can give it that name now, but we can imagine a time when there were many birches. Many scores of the same class must have been laid under this spot. At the east end of the oval was an

elongation not surrounded by the turf mound. I believe the foundation extends along it. I suppose this to have been a platform before the door, a place for the inhabitants to sun themselves, and a landing and disembarking spot. (This platform was afterwards found to extend all round.)

In the middle nearly, but a little to the westerly end, of the oval house was the fire-place. It is higher than the rest of the space. It was here that the bones were found, with shells and nuts. Under a few inches of a white powder is the hearth. It consists of four flattish stones; under the stones also is to be found more peat ashes and some few remnants, but very few, of the substances connected with food. There were no implements, but we did not look into the spot most promising. These will be farther from the fire, if at all. Under the ash was a floor of clay about six inches thick. This was laid so flat that I think the carpet below me is not laid more correctly. Mr Hosack, who knows the country well, believed this clay to have come from a considerable distance. Mr M'Gregor and the neighbours present also knew of none of the same in Benderloch.

The clay had been put there because of the moisture coming up from below. Under it the moss was brown, but still full-leaved moss, as if it had grown last year. It surely could not have grown in that condition. It had not begun any change into peat. Under a layer of moss and peaty matter were the beams or young trees lying as mentioned before. It might be asked, Did they put moss over the trees and then clay? I am inclined to think that the moss and peat gradually came through the crannoge or tree foundation as it sank.

The wooden structure is more allied to that at Wauwyl, as described by Professor Keller, than to any of the others in Switzerland, but I could see no stakes even to keep the trees in their places. One piece of hazel was found standing up, but it appeared rather fresh, as if some one had put in a stick to try if the place was wholly of peat like the moss around.

This dwelling is larger than single-roomed dwellings in the Highlands now are. It may have been double, or one large room. The people need not have been lower in civilisation than some we see, if houses are to be the criterion. The bones found were split up in the recognised prehistoric method. This is supposed to indicate a scarcity of food: it



may also indicate an idle way of spending time and lounging over the meals. When thinking whether it was possible to judge from this as to the age of the remains, I asked some friends who had been brought up in the Highlands, whether any peculiar attention was ever given to the marrow of bones generally, independent of the admired "marrow bones."

I heard of nothing like splitting, but a lady from near Loch Broom said that her father had a peculiar knack by which he could break a bone, and he occasionally performed it as a feat before his sons and guests, using a leg of a sheep. The lady did not know if it was done by strength or by skill, but thinks it required both. Her brothers, who were strong men, often tried but could not accomplish it. This is an evident relic of early times. As many of the prehistoric are also contemporaneous habits, it will be interesting to trace out that of bone-splitting more fully.

And now as to the age of this dwelling. The peaty turf over it was soft and full of fibre. I see no reason for looking to great age from this. Even allowing a very long term for its growth—a foot in a century—we have only three hundred years, and as until 1740, there was a greater supply of water to it, the growth may have been more rapid. On the other hand, the stream, in former times, went through this, and it may have washed off the surface of the moss and prevented the increase. The wood, however, was quite rotten, and although in every respect looking fresh, even preserving the perfect appearance of the bark, the spade went through it with ease. Birch does not keep well under water. Although easily crumbled by the fingers or cut by the spade when wet, it became actually hard and strong when dried. It seems as if the water united with the woody fibre, and made a soft compound or hydrate. This compound was easily decomposed by driving off the water. It is analogous to the soft gelatinous hydrate of alumina and iron which becomes hard by drying.

The circumstances are a little contradictory. The size and independent position of the house might point to a person of some local village importance, but the split bones and the poor hearth take us far back. How far? We do not require to go out of this century in Scotland to find men having only two apartments and still giving judgment as magistrates or so-called bailies to the neighbourhood for miles, and keeping peace better than more learned lawyers have been able to do. In the High-



lands itself I have seen men living in hovels, dark and inexpressibly low in material civilisation, whilst the owners had really as much good feeling and general wisdom in their speech as many men who gave much better dwellings to their cows, and incomparably better to their horses.

The dwelling does not show the civilisation of the individual correctly, neither does the food. In the dwellings mentioned, the food seems to have been far inferior in variety and elegance to that used in the lake dwellings of Switzerland among men who are said to have worshipped the water and the moon.

If the dwelling does not show the condition in civilisation of the individual, neither does it of the race. We have dwellings from London to Caithness and Kerry in abundance, as uncomfortable as those of many savages, but out of some of the worst, some of our best minds have emerged.

According to Scott many of the Highlanders of last century were savage, but a sudden peace brought an almost instant civilisation. The talent to rise was there ; where was it prepared ? Such a change is not made among negroes except in rare individuals. The theory of development forbids us to believe this sudden step to be taken by any nation never previously affected by civilisation. This, I believe, is a very important point. Such a step proves the organisation to have been previously developed. The organisation of a nation cannot be supposed to develop at once, not even that of an individual. I do not therefore look for savage traits among such people, except so far as necessity produced savage habits, just as we see it produces in war in our own times.

In order to see if a wild race has a developed organisation, it would be needful to bring up some of the infants to civilised ways. If they showed an incapacity, we might presume if the numbers were sufficient for a good experiment, that they were really savage. If they showed a capacity, we could not imagine them to be properly savage. The power may lie dormant, but cannot far precede, we may suppose, its first exercise. The theory in opposition to this is the supernatural. This is obvious, but perhaps I ought not to bring it forward here.

The white ash at the hearthstone was supposed to be peat ash, but it was mixed with a good deal of bone ash. The analysis is as follows :—

*Soft Earth from Floor of Lake Dwelling.*

Phosphate of lime, . . . . .	8.595
Phosphoric acid in combination with iron and alumina, . . . . .	1.127
Sesquioxides of iron and alumina, . . . . .	11.331
Silica and sand, . . . . .	59.287
Moisture and organic matter, . . . . .	20.320
	<hr/>
	100.660
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(Total phosphoric acid = 4.658%).

The clay or hard portion of earth contains a very little phosphoric acid.

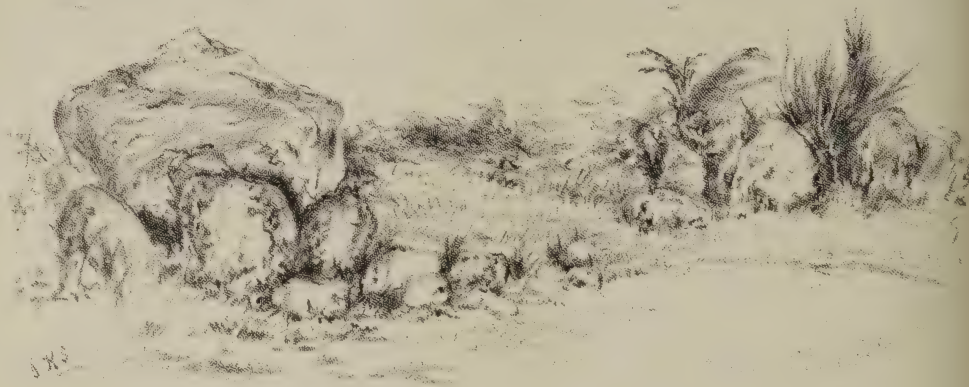
The peat portion contains but a trace. A large quantity of the ash was employed for the test.

The bones must have occasionally been thrown into the fire, and in such a case they crumble very readily, whilst the moisture would assist. They belonged to sheep and goats.

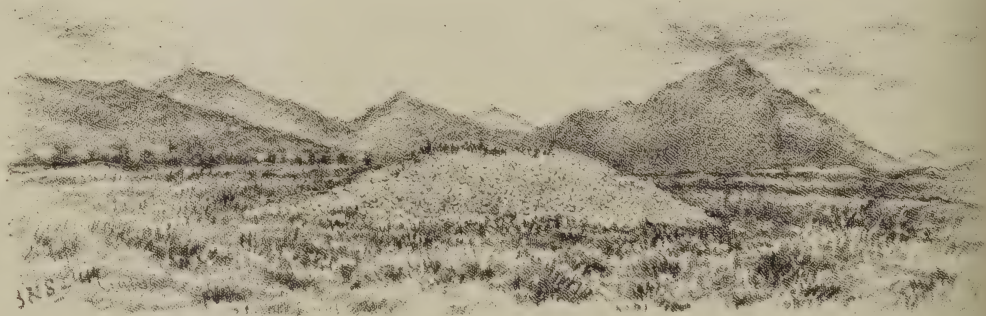
As there is no reason to suppose that, however inferior as architects, the men were savage, we look now for the inhabitants. Who were the people that cracked nuts at that hearthstone? The lake is called, phonetically written, Loch-an tawail, as I should say, but Mr John Campbell tells me, that it is either the Loch of Samuel or the Loch of Somerled. Now I am no Gaelic scholar, and ought not to speak, but neither am I an antiquarian. However, it would appear that the names Samuel and Somerled are one in Gaelic. The Loch of Somerled would be Loch-an-t-Shomhairle, which quite agrees with the sound. Now, did the "mighty Somerled" live on this lake dwelling?—perhaps some of the relatives. We are told he had possessions both on the mainland and the Western islands; the power went to the second son, whose descendants are Macdougalls of Lorn, and live within six miles of this place.

See more in a note by Sir Walter Scott to the first Canto of the "Lord of the Isles." Did Somerled, who died in the 12th century, live only in a small house like this? It is not probable, but we do not know much of the times. It is only certain that he was closely connected with the neighbourhood. However, we do not depend on traditions concerning him, as the family kept the name of Somerled. There is found in the Priory of Ardehatten the following inscription:—"Funallus Somherle





*Grindechs at Achnacridhe beg or Achnacree beg*



*Barons Cairn - Lochanabeich - Connel Ferry.*

Macdougallus prior de Ardchattan mcccc." (from the 2d Statistical Account).

Here we have a very probable direction in which to look for the inhabitants of the island; in fact, an almost certain one. Another inscription is, "HIC JACENT NATI SOMERLEDI MACDOUGALL DUNCANUS ET DUGALLUS, HUIUS MONASTERII SUCCESSIVE PRIORES, UNACUM EORUNDEM PATRE, MATRE, ET FRATRE ALANO, QUODUM DUGALLUS HUIUS MONUMENTI FABRICATOR OBIT ANNO DOMINI MCCCCII."

I shall leave islands for a while so as to move in order. There may be something at a later period to say regarding the small discarded burying place up the hill, and the well near it now neglected, although in the memory of young persons it was considered as sacred, and into which, or into a neighbouring tree, people put gifts when they drank of it. Moving on eastward near the hill, we come to a very large cairn. (See Plate VIII.) This is called Ossian's cairn; the name appearing again. It has not been opened, but many of the stones have been removed exposing very near the circumference stone coffins, and, it was said, urns. It is reported to be hollow within, because sounds were heard of some falling stone, when the men that removed the outside were working and had approached near the middle; a curious little remembrance of forty years ago. (Since opened and chambers found in it, to be described.)

One remnant of a stone coffin stands outside hardly distinguishable.

The cairn was surrounded by trees and a wall, according to the reverend wishes of General Campbell of Lochnell, but all this is going to ruin.

Behind is another cairn, further in the moss, and to the south. A good deal of it has been removed in order to make roads over small pieces of the moss.

Going still east till we come to the brook, and crossing it, we find two memorials of early times on the farm of Achnacridhe beg (pronounced Achnacree). They are cromlechs, I suppose. (See Plate IX.) I do not know why it has become common to call cromlechs, dolmens, of late. I am not aware that anything is gained, and we use another dialect of the Celtic for domestic structures. Besides, according to Max Müller, a dolmen is a hole stone, or stone with a hole in it. These are rarer, and the name ought to be properly applied, or it may cause much confusion.



Some people may think that these are neither the one nor the other. They are, however, megalithic structures; the largest and most easterly has ten large boulder stones arranged somewhat in form of a grave. These have over them two large blocks of granite: one has slipped off the boulders a little. Each may be about a couple of tons weight. The smaller cromlech is only a few paces to the west of the larger. It consists of five large boulders with one mass on the top. The use of five and ten is worth remarking. Around these cromlechs there is a circle of small stones, evidently the remains of a cairn which has covered the whole. It is a case such as has been often observed of a greater and lesser burial in one cairn. The cairn stones are removed except at the lowest layers: they are of the usual small boulder class, six to eight inches in diameter, used for the other cairns. These abound in the beds of the streams at the sides of the lochs, and in the little soil which exists on the plain. These cromlechs lie on a fine romantic spot looking on Ben Cruachan, Loch Etive, Mull, and Morven.

If we go forward by the side of the loch towards Connel Ferry, we come on several cairns. One is very large, and the farm takes its name from it, Achnacarn. I will not at present pretend to characterise every one. All those along the road have been diminished in size, and some are scarcely distinguishable. That they should be found along the roads speaks in favour of their being raised when the moss was difficult to traverse. It may be said that these roads are new (forty years old); that may be, but the line along which they go would even in remote times be passable; that towards the lake manifestly so, as the moss ends there, and that towards the hill would no doubt have been made passable from its convenience for those going from the extreme points of Benderloch. The latter must have been frequently traversed, even if the place were thinly inhabited, exactly as it is daily now passed by many persons as well as the postman. At any rate the cairns are near the roads, as a rule, and I think it shows the moss to be older than they. There are one or two towards the cottages of Loch-a-nan-Ragh, and three near Lochanabeich. These were not less than fifty feet in diameter; only the base remains. Dr Wilson is quite correct in saying that they stand in the soil below, but we need not consider them older than the moss, nor does he say that they are, although one might infer it.

There is, however, one cairn in the moss itself, although not far from one of the lochs, so that it is easily approached. This is called "The Baron's cairn" (see Plate IX.); it is not so large as the others, and nothing remarkable is seen about it—a dreary heap of stones in a moss. It is not chambered. I made an opening at the top in order to see, and without disturbing the sides in the slightest. Indeed it is too low to be chambered. It has been mentioned by several who have written of this district, and sometimes spoken of alone as if it were important, but its only importance seems to consist in its having a name that speaks of times less distant than in other cases. No one can tell who was the Baron. Did he live here? Before leaving, I made enquiries as to the probability of people having lately lived on the moss near. There was a cottage, now removed. Mr McGregor, the ground officer, informed me that the family had not been long on the place, and that they had got a cottage put up there only for a short time, as it was the only convenient spot obtainable. The ground was grassy, and the space that seemed to have been enclosed was larger than gardens generally are in the Highlands. This appearance, Mr McGregor says, it must have had very long. No one knows its history, and the name remains in the mouths of very few. It is "The Baron's Court" (Cuairt a Bharan). Here, then, may be the homestead as well as the grave of the Baron. This old garden, as I suppose it to be, may have enclosed a house. One cannot mistake the changes that take place on turf near inhabited places. The site was chosen probably to be a little off the moss, and near the small lake. It is not mentioned in Sir John Sinclair's Notes, or in the Statistical Account. The choice of place may have arisen from the accessibility. The way from Loch Etive is less mossy if one keeps on the road near to the first little lake, and skirting it for a while, goes on to the second. It may, however, be that the frequent passage of feet has rendered this more solid. It may also be that the solid grass plats around houses near a moss are obtained in a great measure by the constant tread of feet pressing and draining, as well as by the waste products nourishing a richer vegetation. I hope to examine this "Baron's Court" further (probably a real court or Thingwall). At present it is interesting to connect a cairn with the old dwelling-place of its occupant, and to connect a dwelling-place in the lakes with a family name well known.

The "Baron's cairn" stands on the soil below the moss, and there is a depression round it as if the moss had been cut down to make abundant room for the cairn. It is not at all probable that a burial, which evidently took a good deal of trouble, would take place in the wet moss. I think this the proper explanation of the resting place of such a cairn, although the weight of stones might cause a great depression; and water passing, along with air, continually through the cairn would remove peat. The condition is very different from that of the moss under the lake-dwelling, kept in continual moisture, and enclosed under a covering of clay as well as of the turf above it.

If we now pass up Loch Etive, we come to Achnaba. The title of this farm is curious, and illustrative of the mode in which names are so readily formed in the Highlands. One of the deep hollows of the district is here; it resembles the shape made by a cow lying down in hay or in some soft place, and so they call the farm "The Field of the Cow." The other curious names must be explained elsewhere. On this farm are three or four stone circles; but I am not sure of the number, as I really saw only one. It is very complete, but scarcely visible all at once as it is so much overgrown. Another was covered over very lately with soil; and two or three are among the woods.

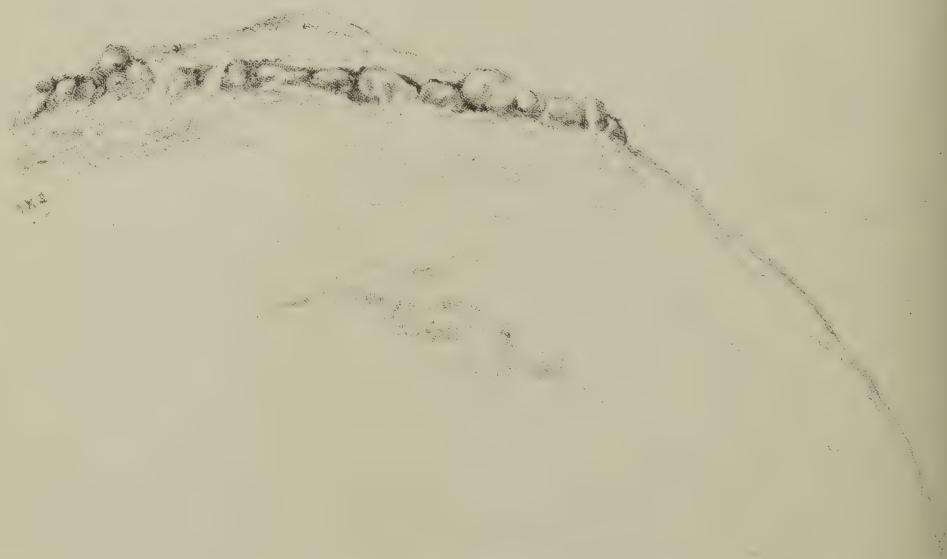
Going up the lake we come to Ardochattan, the priory, and the old church above, at Baile Mheudan. It is not clear why it is called St Bede's in some books. The name is rather that of St Modan of the eighth century, who is said to have retired for prayer into the mountainous district of Dumbartonshire from Stirling, where he lived a good deal, and to have died near the town of Dumbarton. The use of B in the name may arise from the change of B and M into V, written Bh and Mh, to satisfy grammatical necessities. If a person heard the place called Baile Veudan, he would not know whether the original form was Meudan or Beudan. However, in this case the chief reasons go towards M, and the "New Statistical Account" has it so; see also authorities in "Butler's Lives of the Saints."

It is very interesting to connect a thorough ruin such as this, or the one at Kills, with names so old in Scotland, and so little spoken of in history. Tradition has been left to do all, and we are led to have more confidence in it.





*Urn from a cave under Dun Bhaile an Righ (Volanree),*



*Dun Cuthaich - on Loch Etive opposite Ardochattan.*



We may pass over to the south side. Almost exactly opposite the Priory, and above the South Ferry house, is a somewhat conical hill, called Dun Cathich, which means, perhaps, the hill of Battle. Around the summit is a stone circle of a striking kind. (See Plate X.) Like all those of the district, it is composed not of tall, upright stones, but of rounded masses. These stones are much larger than any others in the circles around, and are of granite. The hill is perhaps 300 feet high. The stones touch each other nearly or wholly; in the other instances seen there was always some considerable distance between them, greater generally than the breadth of the stones. The people say that the granite is from Duranish, which is the hill opposite, and farther up the loch, looking to Bunawe, and from which paving-stones are brought to Glasgow. This question did not arise until it was too late to examine if evidence could be had of natural or artificial transport. If the latter, there was at the time of building considerable skill in making boats or rafts to bear a good weight.

The circle may be sepulchral, like many other circles, but its position is peculiar, and the size of the blocks gives its importance. The name of the place below is Ruth na charn. *Carn* may mean a cairn burial, or a stony hill. It is however said, that this was one of the beacon mounds, which extended from Dun mac Uisneachan. The first is said to be the yellow hill of Connel—a small conical and artificial point near that ferry, and a series is pointed out up the Awe, from which it went onwards to the east. The second is Tom-na-h-aire, “The mound of watching,” between Dun Cathich and Connel, on the south side of the Etive.

There is said to have been another series from Lochnell. A little examination of these lines would probably give matter of interest. The beacons are spoken of as so arranged that a very few minutes were necessary to telegraph a message to Edinburgh or Stirling.

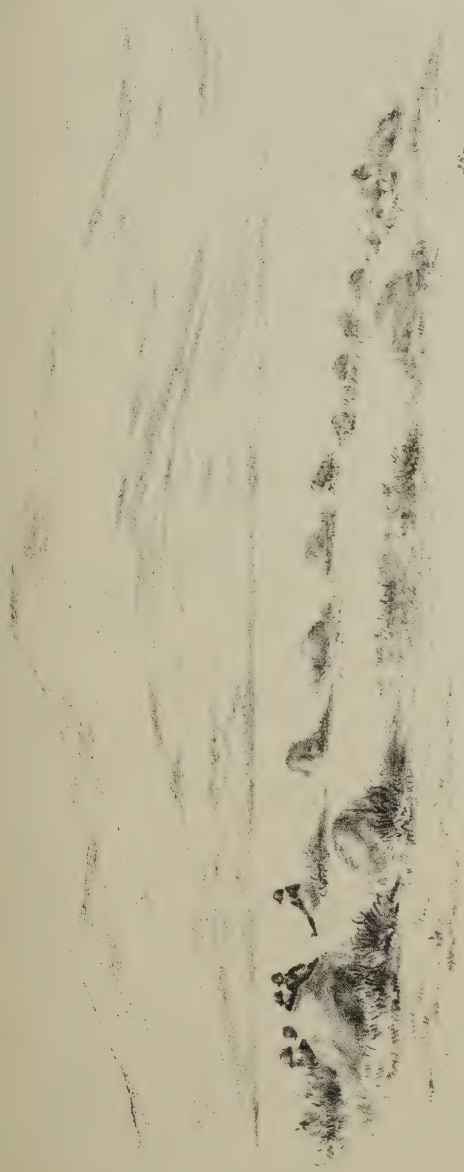
On the south side of Loch Etive there are some things to examine; but excepting a trace of a destroyed circle on the Oban road, and about half a mile from the Connel Inn, westwards, I have nothing described till we come to Lochnell or Lochneala.

Lochnell was visited because of the numerous legends connected with it. At Lochgilthead I was shown one of the places where Diarmid killed the famous boar, and died afterwards. Here at Lochnell I was shown

one also ; but the congregation of legends, and the fixture of names connected with them, on the farms, streams, rocks, and wells, makes this one of the most remarkable of all the places in which Diarmid killed the boar, and connecting it with Loch Etive, it must not be neglected. Whether Diarmid ever killed a boar or not, it is still interesting to inquire why the legends attached themselves to certain places. I am not, however, to deal with them here.

At the upper part of the loch there is a very large stone circle. (See Plate XI.) At one side the stones are doubled, not in a very regular manner, but in a way that has brought out remarks, and may still be remarked. (See a drawing of a covered circle, with stones doubled at one part. It is in Denmark (Zealand) in the Year Book for Nordisk Oldkyndighed og Historie 1866). I am told of others that have been destroyed near this. On the side of the road is a pillar about 12 feet high, square, rough, and without any markings, and not much weather-worn. Beside it is an oblong made of twelve boulders, as if a grave. The name given to the upright is "Clach Dhiarmid," Diarmid's stone or pillar, whilst the enclosure below is called his grave. (See Plate XII.) The completeness of the story, as it was told by an old farmer here, is unusual, perhaps explained by the seclusion keeping families long in the same place.

At the lower part of the lake, on a knoll, is another megalithic burying-place. (See Plate XII.) Here there is a distinct grave made, not of boulders as at Achnacree, but of flattish stones. There is a large granite mass above it, but evidently not entire as at first. An old man of the district says, that about sixty or seventy years ago a piece was broken off to make a millstone, which is still in use, I have forgotten where. A few feet from this grave is another, but no covering stone appears. This is smaller than the first. Around the two is one circle, covered at present chiefly with turf, but with stone below. The whole has been covered with one cairn to all appearance. This, like the other cairns and structures, is in a very prominent place. The views from them all are fine. We cannot suppose that effect was neglected. This was no doubt the burial of an important person. I fear the opinion on the age of such monuments puts the common saying here quite out of belief : they give the grave to Cuchullin. Late opinions would send it to the bronze age ; but perhaps it is much older.



*Circle at Cleigh-head of Lochmell.*

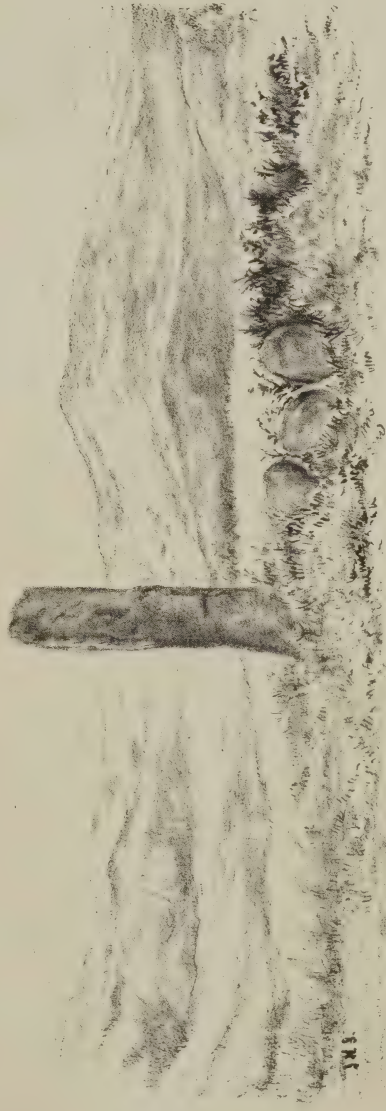


*Remains of two double circles at Barvaldine  
& outline of Appin hills.*

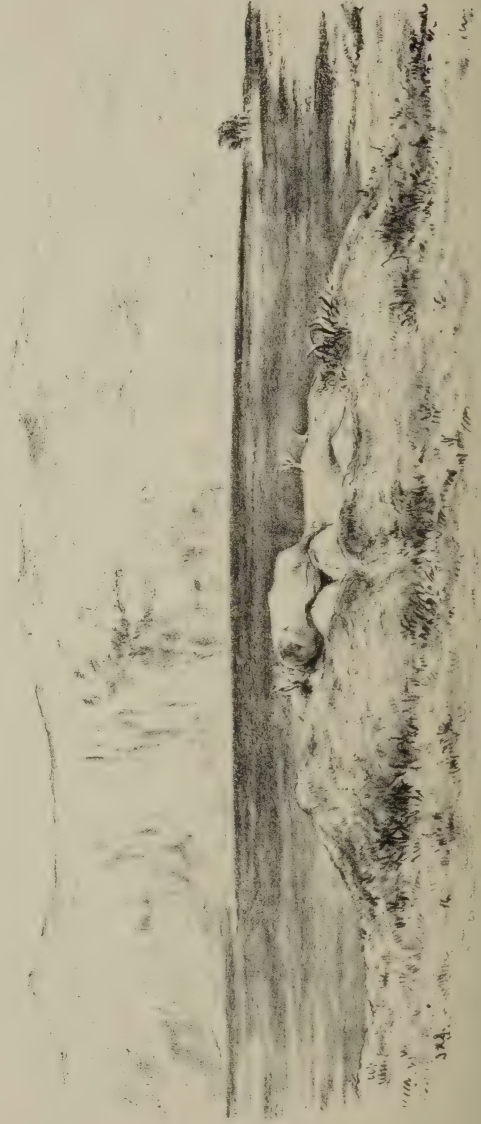








*Standing stone called "Clach Dhiarmid" at head of Lochneil and oblong enclosure below*



*Megalithic double burying place near outlet of Lochneil.  
The little wooded island to the right was a lake dwelling*

In a field near the stream of Feochan, which drains the lake, and not far from the outlet, is the base of a large cairn, about 60 feet in diameter. The stones have been used probably to build the neighbouring houses. A stone kist, nearly square, is seen in the centre. The burial was probably of ashes only. The adjoining hamlet, like that at Clach Dhiarmid, is called Cleigh or Burial Place; one may imagine from that name other places of sepulture around; but, as in our own cemeteries, there may have been many small, and only a few large enough to remain for many years.

*Lake Dwellings.*—Stories had been told me of a buried city which was submerged by the floods that made the lake, and of which parts could be seen on a clear day. It was also said that there was an island on the place in which the Campbells of Lochnell lived in former times. Their estate has the name of Lochnell, and from it they take their present territorial name always used in the Highlands. This island is at the upper end of the lake, and cannot be approached without a boat. The number and size of the stones upon it show that some building had been there, but there is no surface proof that a large well-constructed house existed. There are trees upon it. The stones must have been carried to the island. They are all too similar to be natural. However, there was a natural island below, as the depth and distance from the shore prevent us thinking of such a great undertaking as the manufacture of one from the lake bottom upwards, whilst some of the rocks seem *in situ*.

At the lower end of Lochnell, as the stream from it begins to form, is a very small island, which might be approached by wading. (See Plate XII., right-hand corner.) It is nearly round, not much larger than a good-sized cottage. Four small trees stand on it. It is surrounded by stones large enough to be difficult to lift, and in some places showing themselves to have been put together by art. It would appear as if there had been a pretty firm wall all round—very firm it could not be without mortar or heavier stones. Within the range of stones three or four feet is a raised turf, as if this had been the wall of the house; the centre of the space was rather higher than the rest, and there I expected a fire-place to be found. By digging about three feet and a half, the ashes of peat were obtained, bones, charcoal, and nuts. A very small hole was made. I had not then received liberty to dig. I was satisfied that this was a lake-dwelling, and that it had been defended by a wall. Advantage seems to have been

taken of a shallow place, and stones must have been carried to it. It may turn out that there is a wooden foundation. It is not easy to see by what means the covering of earth now over the floor was so much raised. The water from the lake has little or no deposit in summer; but there may be natural circumstances that have raised the soil. The bones here were split as at the lake-dwelling in the moss.

As it is probable that these lake-dwellings existed till a very late date, we may find some clue to the inhabitants of this lower one.

As all future is uncertain, this little is sent, not knowing whether I may be able to send another communication. It may be well to preserve this list of these monuments and remains, adding to our knowledge of them from time to time.

## II.

NOTICE OF ANCIENT "FEEDING-BOTTLES" FOR INFANTS (ONE CONTAINING REMAINS OF MILK, RECENTLY PRESENTED TO THE MUSEUM OF THE SOCIETY); WITH NOTES OF THE DISCOVERY OF SIMILAR VESSELS IN GALLO-ROMAN GRAVES, AND INSTANCES OF THEIR OCCURRENCE IN ENGLAND. BY JOHN ALEXANDER SMITH, M.D., V.P.S.A. SCOT.

Among the numerous articles recently presented to the museum of the Society, one donation is especially interesting to us. It was made by Sir Walter Simpson, Bart., and consisted of a collection of various objects of archaeological interest which belonged to his late father, our much loved and much mourned Fellow and former Vice-President, Professor Sir James Young Simpson, Bart., M.D. My intention at present, however, is only to notice two fictile vessels which formed part of this donation.

These vessels are of small size and height; one formed of a reddish-coloured clay (see fig. 1. of the annexed woodcut), showing remains of a slight glaze on its outer surface, is of a somewhat globular shape below, and tapers gently upwards to a rather wide mouth above, the lip of which is full and rounded. It measures three inches in height and about  $3\frac{1}{4}$  inches in greatest breadth, and is only ornamented by two slightly indented parallel lines which encircle the shoulder of the vessel.

The other (fig. 2) is more ornamental in character; it is a shallower vessel,

rounded and more flattened in shape, and has a small opening or mouth above, and in addition a loop-shaped handle projecting on one side. Its surface is ornamented with a series of slightly projecting broad and rounded leaves or mouldings which spring from the under part of the vessel, and rise upwards towards its shoulder, where they terminate in rounded extremities. The handle is also ornamented with a couple of bold projecting ribs. The mouth of the vessel is bevelled within to hold a lid, which had been fitted to it like that of some of our modern fictile teapots, and it is interesting to notice that a small notch had been cut out



Fig. 1.



Fig. 2.

#### INFANTS' FEEDING BOTTLES.

Fig. 1. Plain and without handle (3 inches high).

Fig. 2. Ornamented and with handle (2 inches high).

of this bevelled part, on opposite sides of the mouth. This must have been done for the purpose of receiving two projections which had existed on the bottom of the lid, and, on the lid being put in its place, these projections would pass through the notches, and the slightest turn of it to either side would have the effect of locking the lid, so that it could not fall from its place when the vessel was raised or moved about. The fashion of occasionally locking the lid is still used by the French potters, I have been told, but not by the potters of Britain. The vessel measures 2 in. in height by  $3\frac{3}{4}$  in. in greatest diameter. It is formed of a fine reddish clay covered on its surface with a rich black glaze, and almost reminds one of the ancient Etruscan ware; it bears marks, however, of



having been repaired, and is probably similar in character and use to the other vessel (fig. 1).

The distinguishing characteristic of both of these vessels is the presence of a small tapering nipple-like projection, about three-fourths of an inch in length (slightly broken at the point in fig. 1), which rises upwards from one side of the body of the vessel, and is pierced with a very small opening. It is evident that it is not well adapted for the purpose of being used as a spout merely to pour fluids from the vessel, and still less to give passage to a wick on the supposition of the vessel having been a lamp, the size of the aperture being apparently too small to be available for either of these purposes. It rather suggests, therefore, the idea that it was intended to allow fluids to be slowly sucked from it, not like the modern drinking-cup of an invalid, to which, however, it is closely related, but may have been probably the sucking or feeding-bottle of an infant, nursed in this artificial way.

As the subject of ancient feeding-bottles is a new one, at least in our Society, I shall notice some of the evidences of their being really intended for the use of infants; and shall shortly allude to those found on the Continent, especially in France, and next to those which have been discovered in England.

The learned Father Montfauçon, in his great work of "Antiquity Explained" (I quote from the third volume of the translation, published by David Humphreys, M.A., London, 1721, folio), has given a representation on plate XX. of two somewhat similar vessels, on the authority of Bonamie. One closely resembles the last of the two just described; the other is more simple, and somewhat pear-shaped in character, the large opening to allow the vessel to be filled, which, however, is covered with a hollow perforated disk or strainer, being at the thicker extremity of the vessel, and the sucking nipple, at its other tapering and pointed extremity. It has also a looped handle attached to one side, for use by the left hand. This vessel reminds us exceedingly of the ordinary glass "feeding-bottles," of a closely corresponding kind, used for nursing infants in our own day (one of which I now present to the Museum of the Society, for comparison with the ancient ones), and only gone out of fashion from the application of glass and India-rubber tubing and nipple, to the now improved feeding bottles of the latest fashion. These little vessels, Montfauçon includes with



other Roman fictile ware, and says, "they are thought to have been table or kitchen utensils, but for what use they were designed the reader must judge, for I cannot find it out." Vessels of corresponding character and shape have been long known to antiquaries, and latterly, for want, perhaps, of a better explanation, they have been assumed to be "feeding-bottles" for infants, for which purpose they seemed suitable enough.

An archæologist of more modern times has added much to our knowledge of antiquities, and especially of the objects found in ancient Gallo-Roman and Franc graveyards. I refer to M. l'Abbe Cochet, Inspector of Historical Monuments of the Seine Inferieure; he has published the results of his explorations in the *Memoirs of the Society of Antiquaries of Normandy*, and more recently has gathered them together, and published them in his valuable work, "*La Normandie Souterraine*." (I quote from the second edition, Paris, 1855, 8vo.) He tells us that numerous glass and fictile vessels were found deposited beside the dead in these ancient Gallo-Roman graves, belonging, as he believed, to the earliest centuries of our era. Some of the dead, indeed the most of the dead, had been burned, whilst a few had been simply buried, and both were apparently of the same antiquity. These vessels found buried beside the dead were, however, exactly similar to other fictile and glass vessels which had been used by the living, and were found on the sites of various Roman mansions or villas. As, for example, the fictile and glass vessels found in the Roman villas or towns of Entretat, Bordeaux, Chateau-Gaillard, Braquemont, Saint Margaret, and Maulévrier are exactly the same; they are of the same clay, have the same glaze, and the same forms, and are stamped with the names of the same potters and glass-makers, as those taken from the cemeteries of Dieppe, Cany, Lisieux, Thiétreville, and Barentin. Some of these vessels, both of glass and earthenware, contained the remains of the dead,—their bones burned and broken into small pieces; while others had apparently contained food or drink when they were deposited beside the dead; and in all probability, Abbe Cochet thinks, honey or milk, as some Gallo-Roman vases found at Cany still contained a white liquid; or even wine, as the Abbe Lebœuf has ascertained, from a bottle containing wine found in 1752 at Anières, on which was inscribed the words, "*Utere Felix*." Vessels found in other places have still remaining inscribed on them the words, "*Bibe*" or "*Bibas*," and "*Felix bibas*" or "*Utere Felix*," clearly showing the use

to which they had been set apart. Others had probably contained food, and the remains of food in the shape of the shells of edible molluscs of different kinds were also found.

In other graves, Abbe Cochet also found groups of fictile and glass vessels of a much smaller size, which had apparently been used for food and drink, and along with them occasionally one of the vessels with the nipple projection, or a "feeding bottle;" these he considered to have all belonged to children, and were found, as he believed, in the graves of children. He was fortunate enough to find the skeletons of young children associated with these peculiar vessels, as in particular in one instance at the Roman cemetery at Cany, where the skeletons of several young children were found together, and were carefully examined by anatomists, who were able to ascertain among the remains those of an infant of ten or twelve months, and along with it was found the globular vessel with its nipple-like spout—the "feeding bottle" of the infant, which had thus been buried with it. I may notice that the fact of the skeletons of infants and children being found in these graves even when the remains of the adults exist only as burned and broken bone ashes, is quite in accordance with the Roman law which forbade the burning of the bodies of children below the age of seven years, but ordered them simply to be buried in the earth. The same fact is referred to by Juvenal, who is also quoted by the Abbe Cochet. In these same children's graves were found, in addition to the vessels of the nursery, the toys, beads, and playthings of the children.

This discovery of Abbe Cochet, taken in connection with the characters of the vessels themselves, leaves little doubt of the correctness of the opinion of their being really the feeding bottles of infants. The infants' feeding bottle is styled by the French a *biberon*, and from the nipple-like projection on these vessels, they have also been designated *tétines*; they have been found formed of earthenware and also of glass in various Gallo-Roman cemeteries. They vary somewhat in shape, some being without and others with handles, which are generally set at right angles to the nipple-like spout, either on one side or the other of the vessel, as if for the purpose of its being used by the right or left hand of the nurse. Some are taller and more jug-like in shape than others. One, figured by Abbe Cochet, which was found at Neuville-le-Pollet, is more rounded in character with its nipple projecting from the rounded surface, some-

what resembling the form of the mother's breast itself; but all or nearly all have the same nipple-like spout, a very few only being mentioned that have the mouth of the vessel contracted apparently to answer the same purpose.

I have not noticed any arrangement or markings to make us fancy that either a natural or an artificial teat had been tied for use over these small projecting spouts. The mouth of these vessels had been apparently covered with a perforated disk, which may have in some cases also answered the purpose of a strainer, and, while it prevented the contents of the vessel being spilt, at least in any quantity, allowed the infant to suck freely by its admitting air into the bottle. Abbe Cochet mentions that a glass feeding-bottle found by him had a perforated bone lid or cover, which appeared to have been at one time attached by a cord to the handle of the vessel.

M. Cochet tells us in his second work—"Sepultures Gauloises, Romaines, Franques, et Normandes, Paris, 1857," 8vo—that these feeding vessels have been found at Dieppe, Lillebonne, Cany, Fécamp, Lisieux, Evreux, Bordeaux; at Gièvres, at Soing, in Sologne; at Steinfort, and in the Duchy of Luxemburg. Specimens of them are preserved in many of the museums of France, as at Sèvres, the Louvre, Rouen, &c.

The Abbe Cochet mentions a curious fact which I have not before seen specially noticed, and to which I wish to call the attention of the Society, namely, the great abundance of manufactured chipped and wedge-shaped flints, which he met with in some of his explorations, many of the sepulchral deposits being regularly surrounded with them.

Since Abbe Cochet's book was published, much has been written on the uses of chipped flints, and their being among the supposed earliest antiquities of man. I do not know in what respect these flints found by the Abbe Cochet differed from those of a supposed very early age, but the use of flints chipped or dressed for some purpose or other, must have been considerable in Gallo-Roman times, from the abundance in which they occur with some of their sepulchral remains. To show this, I quote a passage from Abbe Cochet's account of the Roman cemetery of Dieppe or Neuville-le-Pollet, in "*La Normandie Souterraine*:"—

"Tours nos vases etaient entoures de silex tailles d'une façon cunéiforme; plusieurs de ces silex paraissaient avoir subi l'action du feu.

Chaque sépulture un peu notable s'annonçait de loin par une véritable masse de cailloux. Ces pierres, soit par hasard, soit à dessein, étaient retombées sur les vases et presque toujours les avaient grandement fracturés ; c'était là ce qui rendait si difficile l'extraction des objets pressés entre plusieurs silex."

"Nous n'avons jamais eu l'occasion de remarquer ailleurs une aussi grande abondance de silex taillés, disposés autour de sépultures romaines pour les préserver. Nous en avons également rencontré à Cany et à Fécamp, mais en moins grande quantité."—Pp. 76, 77.

In the Journal of the British Archæological Association for June 1870 the first paper is an interesting one "On Early Tetinæ," by H. Syer Cuming, Esq., one of the Vice-Presidents of the Association, and also a Fellow of our Society. Mr Syer Cuming says, "In this country and abroad many antique vessels of terra cotta have been discovered which were formerly regarded as oil cruses for the service of lamps ; but which are now accepted as infants' feeding bottles, upon which the title of tetinæ has been bestowed." Mr Cuming finds what he considers specimens of these vessels among the Greek fictile vases in the British Museum, dating from about 700 to 500 B.C. One of these has its mouth protected by a strainer ; it has also a spout and handle set at right angles to each other. A vessel apparently somewhat similar in character to this one, but probably of Roman red-ware, is in our Scottish Museum of Antiquities ; it is  $2\frac{7}{8}$  inches broad by  $2\frac{1}{2}$  inches high. From its very small size it is rather difficult to believe it to have been intended for a feeding bottle. There is also in our Museum another still smaller vessel of reddish ware with a black glaze, which has a handle on one side and a nipple-like spout ; but the vessel is very small, measuring 2 inches in height, and the opening of the spout is large, so that it rather suggests the probability of its having been used as a small lamp. In the true feeding bottles, I may state the little spout seems commonly to rise from the middle or lower part of the vessel, while in this vase or supposed lamp it springs mainly from the upper part.

Mr Syer Cuming refers to a curious vessel shaped like a cow, and having a teat-like projection at its hinder part, which was found long ago in Sicily, and was figured in Akerman's Repository of Arts, vol. ii., pl. 23. From its peculiar shape, and the teat-like projecting spout, he considers it was probably intended to hold milk, and to be really a feeding bottle. He



next describes and figures various ordinary examples found in Romano-German graves, one of which exactly corresponds in its appearance with the first of the vessels now presented to the museum ; the others are jug-like vessels of different heights, with handles, and have the usual nipple-like projections or spouts.

Mr Syer Cuming next gives us details of the few instances of the discovery of these vessels in England. They have not yet, as far as I am aware, been discovered in Scotland, which is perhaps not to be wondered at when we think of the more limited Roman occupation of our country, and the comparative scarcity therefore of our Roman remains. The first of these vessels discovered in England, Mr Cuming tells us, was in 1848, at Shorne in Kent, along with other Roman vessels, a group of which, including a feeding bottle, which belongs to the class of those without handles, is figured in the *Journal of the British Archaeological Association*, vol. iv., 1849,—no suggestion as to its supposed use being, however, indicated in the paper. Another instance was discovered in 1861 in the Roman cemetery of St Sepulchre at Canterbury, an account of which is published by John Brent, jun., F.S.A., in the *Archæologia Cantiana*, vol. iv., 1861. It is there figured and described. It was formed of red ware, and was supposed to have been deposited beside the remains of some child to whom, when living, it was the means of conveying nutriment. Mr Cato has furnished Mr Syer Cuming with notes of one of these peculiar vessels found in the grave of a child in the Isle of Thanet, and in this instance it resembled the first of our specimens in having, he says, like the German ones, no handle. Others have been found at Stoneham, and in other parts of Suffolk, and also in Yorkshire. I am informed by Mr Charles Wakefield, that three “feeding bottles” of the same character as the one first described without the handle, are preserved in the museum at York, which were found in that neighbourhood about the year 1856 ; one is of red-glazed pottery, and the others of yellowish clay. There are also in the same museum, several specimens corresponding somewhat in character to the second specimen described. Two infant’s feeding vessels were found in Lancashire, at Wilderspool, near Warrington, in 1869. They were formed of the red ware, and from the relations of the handle to the nipple, one appears to have been intended for the right hand and the other for the left ; in other



respects, however, the vessels are not exactly a pair. Dr James Kendrick of Warrington has since published details of the Roman remains found at Wilderspool in the "Reliquary," No. 4, vol. xi., July 1870, p. 43. He has figured the two "feeding bottles," which he says were found in a conical pit 2 feet in diameter at the top, and the sides of which showed that a strong fire had been burned in it; the vessels were partially filled with a greyish brown dust, amongst which the microscope detected small grains of phosphate of lime, clearly indicating, as he thought, that it had been used as a sepulchral urn, though probably for a young child, as no distinguishable fragment of bone remained. He states that according to Pliny it was not usual to burn the bodies of children prior to their having cut their teeth, though feeding bottles would be used beyond that age. Mr Syer Cuming says the clay of which these tetinæ were composed was so absorbent that the lips could not be pressed against them without adhering; he therefore thinks that when used for feeding infants, their spouts must have been provided with a calf teat or some such thing as a protective. May this absorbent character not have been simply caused by the loss of the glaze of the vessel, either by the mere lapse of time, or rather by the hot fire to which the vessel had apparently been exposed?

Mr Syer Cuming tells us tetinæ have been found in London, some of the red pottery and others of the grey or smother-kiln ware. In conclusion, he refers to mediæval "feeding bottles," some of which seem considerably to resemble the drinking cups with long spouts now used by invalids.

I regret much that I am not able to say where or from whom Sir J. Y. Simpson got the feeding bottles which I have described. Some time ago, when conversing with Sir James about the various articles found in graves, he alluded to the fact that vessels, supposed to be the "feeding bottles" of infants, had actually been got in what was believed to be the graves of children. He did not, however, say that he had procured specimens of these vessels, in which he seemed much interested, as I am sure he would have done had any of them been at that time in his possession. I know that not long before his last illness he paid his first, and but a very short visit to Rome and Naples; and he may perhaps have brought these vessels home with him from the Continent. One of

them at least seems exactly similar to those found in Romano-German graves.

Abbe Cochet's discoveries of the food vessels and drinking cups buried with the dead have been already referred to, some of which appeared to have contained fluids like honey, and others a whitish fluid which was supposed might probably have been milk. I have not however found any account of the presence of milk being certainly proved as still existing in any of these *tetinae*, or published in the various notices of their discovery. Now, however, I am fortunate enough to be able to supply this missing link as to their use, although from the other circumstances already mentioned, there seems to be no reasonable doubt as to its having been fully established. When our zealous curator, Mr Joseph Anderson, went to Sir Walter Simpson's to superintend the careful removal of the donation to the Museum, he naturally packed the different articles as closely together as possible, and taking up a small sharp-cornered fragment of stone, he dropped it for safety into the wide-mouthed sucking bottle without the handle. The stone was thus rattled about in the apparently empty vessel, and some days after, on inverting the bottle to take out the stone, portions of a thin yellowish crust or skin which had lined the bottom of the vessel, the continuity of which had been broken by the stone, and thus had been made to peel partially off, fell out along with the stone. The crust was subjected to a careful examination by Mr Anderson and myself. It showed an irregular surface next the interior of the vessel, much engrained with dust, the other side having a smooth and horny appearance. It was slightly flexible in character, and was evidently of an organic nature, taking fire when held to a flame, and melting with a smell of burning cheese. It had indeed somewhat of a horny cheesy-like consistence, and there was little doubt it was the dried-up remains of milk which the vessel had contained. To make the matter sure, however, I took part of the crust to our well-known and obliging analytical chemist, Dr Stevenson Macadam, and in a day or two received from him the following note :—

“The crust from the interior of the supposed child's feeding bottle consists essentially of casein, and represents exactly what would be left in a vessel where some milk was allowed to dry up.”

In this instance, therefore, the “feeding bottle” most certainly had

contained milk. The presence of the small nipple-like projection with its minute bore, as well as, in this case, its actually containing the remains of milk, and all the other circumstances connected with the finding of these curious vessels, leave no doubt, on my own mind at least, that we have here an example of an ancient attempt to supply an ancient want, common doubtless, to the whole family of man. When from any cause, natural or artificial, the natural supply of the best source of nourishment for the infant, the mother's breast, failed, then, as now, it became necessary to feed the child in some other way with the next best food, the milk of the lower animals; and bring it up, as the common phrase has doubtless been then, as now, "by the hand," or "on the bottle."

### III.

ADDITIONAL NOTE ON EASTER ISLAND, ON THE DISCOVERY OF  
CARVED PLANKS OF *TORO-MIRO* WOOD. BY LIEUT. COLIN M.  
DUNDAS, R.N. COMMUNICATED BY ARTHUR MITCHELL, M.D., SEC. S.A.  
SCOT.

Early in the present year the Chilian Government sent a vessel of war, under the command of Captain Don Ignacio L. Garra, to examine the island, and to report upon it. The main features of his report correspond well with what we observed in the *Topaze* in 1868, except that he reports the population to be only 450 males and 150 females, a most lamentable decrease.

After describing the large stone statues, however, he says—"Besides these works which so clearly denote an era of advanced civilisation, we have other proofs well worthy the attention of antiquarians. We have discovered three planks of *toro-miro* wood, covered with magnificent hieroglyphics. Two of these have gone to enrich our Museum at Santiago in Chili, and the other was given to the Bishop of Tahiti to be sent to France. This is the only island among the Polynesian group in which such precious documents have been found,—documents which once deciphered would throw a light upon the origin of the original inhabitants of Oceania and America. The natives know nothing of their contents, nor have they the least idea of their use."

Captain Garra describes in his report the character of the hieroglyphics;

but I have heard that they were probably to be photographed, in order to send copies to England and elsewhere.

Dr Arthur Mitchell said—I think that the Society should express its indebtedness to Lieut. Dundas for this further communication regarding the very remarkable antiquities which exist on this little lonely island, and which in some respects are the most remarkable in the world. When I remind you that in an island only thirty miles in circumference, and about 2000 miles on every side from inhabited land, there should be found hundreds of gigantic statues, varying from 8 to 39 feet in height, the truth of this remark will be felt. Thanks to Lieut. Dundas, our Proceedings contain the best existing account of them.

There has been no speculation yet as to their origin. It is improbable that they are the work of the present people, who are in appearance, as well as in language and such customs as tatooing, closely allied to the Marquesans and Tahitians. Can it be that they are the work of a preceding people, now extinct, who came from the East and not from the West?—I mean from Peru or Central America. We have some knowledge which makes it fair to ask this question, but beyond the asking of it we do not go. Stephens and Squier describe rude gigantic statues, not at all unlike those in Easter Island, as existing in Central America, which there is no reason for believing were made by a people preceding, and altogether different from, those who constitute the present so-called aboriginal population. In Peru, again, Tschudi describes rude gigantic statues, which still more strongly resemble those of Easter Island, and which he thinks were cut by men who preceded the Incas.

We do not know much of the flora and fauna of Easter Island. They have no four-footed animals except the rat; but we do know that the flora and fauna of the Galapagos Islands are closely related to that of the South American Continent, and have not come from the Oceanic or Polynesian Islands.

There is one remark in Captain Garra's report which deserves notice. He says that these monuments denote an era of advanced civilisation, but this is not, I think, a fair view of the matter. They are gigantic but extremely rude, and they rather reveal to us that they were made by a people capable of civilisation than by a people actually civilised—not



a cultured people, but a people capable of culture—potentiality rather than possession.

It is curious how differently prehistoric remains like these are interpreted when looked at as marks of civilisation. I do not know what civilisation exactly is; but I am sure that if these very rude gigantic stone statues, made without metal tools, had been found in our midst, that is, in the midst of a people who are understood to be in the front of civilisation, the interpretation would have been exactly the reverse of that adopted by Captain Garra, and they would be held to be evidence of a non-civilised, and not of a civilised era. As regards our cairns, and brochs, and hill-forts, this is exactly what is done, and the argument has been often improperly used in enquiries into the state of primitive man.

#### IV.

NOTES ON MATERIALS FOUND IN A KITCHEN MIDDEN AT HILLSWICK, SHETLAND, WITH SPECIAL REFERENCE TO LONG-HANDLED COMBS.  
BY MILLEN COUGHTREY (STUDENT OF MEDICINE), EDINBURGH UNIVERSITY.  
PLATES XIII-XVIII.

The bone implements, broken bones, portions of pottery-ware, and shells, which are described in the first part of this paper, were found by me whilst on a tour in Shetland during the month of September 1870.

On the western side of the Mainland of Shetland, in the parish of Northmavine, and jutting out into St Magnus Bay, is Hillswick Ness, a peninsula connected with the mainland by a low-lying isthmus, washed on the western side by the Atlantic Ocean, on the eastern side by Urie Firth or Hillswick.<sup>1</sup> In the centre of this isthmus stands Old St Magnus Kirk,<sup>2</sup> between which, and on the western side of the isthmus, is a small voe, called Sandwick;<sup>3</sup> and at the southern corner of this voe is an out-crop of sand, from the base of which the present sea-beach shelves.

This portion of the isthmus, like every little plot in Shetland, has had

<sup>1</sup> Wick means a "voe" or "bay."

<sup>2</sup> Reid's "Shetland," p. 12.

<sup>3</sup> Captain Thomas' Chart of Shetland Isles.



a special name given to it, viz., West Air; but it forms a part of the town of Hillswick.

The outcrop is contiguous to the present sea-beach, and is distant only about 20 yards from the average high-water mark; it is necessarily exposed to the wearing and tearing-down action of the waves in tempests; and I was informed<sup>1</sup> that scarcely a winter passes by but what the sea eneroaches on the land at that place, breaks down and washes away more or less of the outcrop. And this has been going on within the memory of some of the oldest inhabitants.

An idea of the savage force of the waves on this coast during storms may be conceived, when I state that at one place the waves uprear and upheave masses of rock, many of which are fully a ton in weight, and "carry them like so many pebbles to the shore behind."<sup>2</sup>

Again, near Stennis fishing station,<sup>3</sup> which is close to Hillswick, the ground for 40 yards or so from the cliff edge is plentifully bestrewn with large pebbles, broken portions of rock, &c., which have been washed over the granite cliffs, which are at least 30 feet in height. At the time I saw the out-crop, it was quite evident that the hand of man had assisted in breaking it down, for at one point it presented a good vertical section, which had been made sometime previously, for the purpose of forming a saw-pit.

By means of this section, the various layers composing the outcrop were easily recognised, and were presented in the following order, commencing at the top (measurements are given in inches):—

Loamy soil from which grass grew,	Average depth,	12
Yellow beach sand, . . . . .	" "	30
Shell layer, . . . . .	" "	8
Large and small pebbles embedded in sand,	" "	27

The average height of the upper layer above the level of the sea was 7 feet. The layers varied in thickness in different parts, and were not quite horizontal, but dipped somewhat to the south-west. The layers were undulated, and on account of progressive subsidence having been going on were slightly terraced. The shell layer was divided into two parts,

<sup>1</sup> By the Rev. James Sutherland, to whom I now express my sincere thanks,

<sup>2</sup> Vide "Art Rambles in Shetland," by Reid, pp. 19 and 20, and Sketches; also, Dr Hibbert's "Shetland," pp. 527, 529.

<sup>3</sup> Vide Reid, *loc. cit.*, p. 20. (Cannon) (I.)

—one, the thicker portion, about 8 yards in width, which merged into a thinner but more compact stratum of shells, that extended on either side for about 20 yards. The average thickness of the compact shell-layer was 2 inches; whilst the depth of the thicker part varied, being 10 inches in the centre, and 2 inches at its sides, thus tapering off from centre to sides; and on tracing it inland by digging, it slowly decreased in width and depth, and ended at the distance of 5 yards from the cut edge.

It was in the thicker part of the shell-layer, of apparently artificial formation, that the above-mentioned materials were found. The compact shell-layer presented the usual segregated appearance of an ancient sea-margin. In some parts three terraces were distinguishable, as if three of these ancient sea-margins were present instead of one; but these appearances could easily be accounted for by the underworking of the water, and the nearest strip of the old sea-margin having sunk bit by bit. I think that the evidence was stronger in favour of depression than of upheaving. In the other layers I observed no peculiarities.

*Shells.*—The shells were chiefly large forms of the following edible mollusca:—Most abundant—*Ostrea edulis*, *Linn.*; *Patella* (vulgata?), *Linn.* (depressed and other varieties); *Cardium edule*, *Linn.*; *Mytilus edulis*, *Linn.*; *Littorina littorea* (*Turbo littorea* of *Linn.*) Less abundant—*Buccinum undatum*, *Linn.*; *Tapes virginea* or *Venus virginea*, *Linn.* The shells generally were in a very soft and friable condition.

*Pottery.*—No entire vessel was found. The pieces are about ten in number; they vary in size, in thickness, and in the coarseness of the material from which they have been made. Some are nearly  $\frac{1}{2}$  inch thick, and others only  $\frac{1}{4}$  inch. Some are made of fine material, others contain coarse grains of quartz, &c. They evidently do not all belong to the same vessel. They have been subjected to the action of fire, many of them still retaining soot or soot-staining externally, whilst two pieces have in their concavity a *thick* crust, of a dirty black colour. This crust is composed chiefly of *soot*; and it is undoubted evidence of the fire having come into contact with the interior of the vessel or vessels, of which these two pieces form parts. On the external or convex surface of one of the pieces are some rude ornamental lines; these consist of straight lines crossing one another, and forming rectangular spaces. They are pretty symmetrical,

and appear to have been made by some sharp-pointed implement, and not by the finger-nail. This ornamentation only extends over a portion of the piece, therefore it is probable that several such ornamented patches may have been on the exterior of the vessels. The same piece has one of its margins quite smooth; this has formed the mouth of the vessel. The pottery, of which these are portions, must be looked upon as culinary or other utensils, rather than urns.

*Bones*, consisted chiefly of splintered long bones, portions of ribs and vertebræ, short tarsal and carpal bones, a few scapulæ, and ossa innominata of various animals; besides, there were a few whole bones, and portions of the skulls of various animals, several lower jaws and teeth. They belong chiefly to *bos* and *ovis*. There are also present adult and young teeth of *Cervus elaphus* (stag or red-deer), and one or two bones of the *Cervus capreolus* (roe-deer). The bones of birds and fishes were also found.

Since some authors have remarked the absence of certain portions of the skeleton generally in these shell-patches, it may be of interest to state in a tabular form the number of the different bones present; and I have done so, keeping separate the whole from the broken bones.

#### *Table of Bones.*

18 broken portions of cranial bones.

13 inferior maxillæ, with teeth,

Chiefly of the sheep, the red-deer, and roe-deer.

4 entire first cervical, and 3 entire second cervical vertebræ.

15 broken dorsal, and 3 lumbar vertebræ,

Chiefly sheep and red-deer.

5 broken scapulæ; 2 gnawed,

All of sheep, except one, which was of red-deer.

7 broken parts of the pelvic bones; 3 gnawed.

9 humeri, broken; 1 bearing marks of cutting; 1 gnawed.

15 radii and ulnæ; 6 had been split.

Tibiæ, 2 whole; 19 broken and split; 1 belonged to red-deer.

Tarsal and carpal bones, 5.

Metacarpal and phalangeal, 22,

8 of which were partly split and gnawed.

104 broken portions of ribs ; 5 gnawed ; 6 bearing marks of cutting.

A few bones of birds and fishes, but so broken, and so few, as not sufficient to determine species.

Some of the bones are entire, others splintered, broken, and cracked, as if for the extraction of marrow. Not a few possess teeth marks. There are several other marks of cutting, that must have been produced by human agency. Two pieces of bone bear marks of fire ; one piece, about an inch long (a portion of a rib), is charred at one end, and the rest is fire-cracked. The other piece is also about one inch long, is conical, and looks like the core of a sheep's horn. It is burnt quite black into charcoal. If Rüttimeyer's<sup>1</sup> observations be correct, I would infer from them alone that all the above bones are those of domesticated animals.

*Bone-Needles, Awls, &c.*—One narrow and rounded bone implement, 3·2 inches in length, and of about the thickness of a quill, broken at both ends, but narrower at one end than the other. It appears to be part of a needle. Two awls, made of splinters of the long bones of some animals, very rude, each having one end tapering, rounded off, and pointed. A splinter of bone, with one extremity ground down to a bevelled edge ; probably been used for scraping purposes. Portion of the ulna of some animal, with one end sharpened or pointed, but broken : this end bears marks of cutting. Part of the tibia of a sheep, broken above the middle ; the splintered end has been ground down and polished, till a simple blunt end remains ; the bone has a transverse mark near the articular end ; this is either a scratch or a cut.<sup>2</sup> Several other splinters of bone which may have been used as awls, but these, though preserved, I consider "doubtful," and have therefore placed them among the broken bones. Perhaps the most important and interesting objects found in the shell-patch were four of the long-handled combs, made of bone. They lay quite close together. These are described at length hereafter.

What was this shell patch ? Was it in connection with a Pietish broch, or simply an isolated shell mound ? As to the fact of a broch having been found at this place in the memory of man, evidence is

<sup>1</sup> See Lubbock's "Prehistoric Times," 2d edit., pp. 195 and 196.

<sup>2</sup> Mr Joseph Anderson considers this implement to have been used as a punch, or for some similar purpose, since it resembles very closely such implements.



wanting. But from its low position, from the presence of a kind of stone in certain adjacent buildings similar to what had been used in making a Pictish broch about four miles distant, near Priest-Houland (which I examined), and to such as exists in the Clikamin broch; from the fact that all long-handled combs hitherto found above the Firth of Forth have been found in connection with brochs; also from a want of completion in the chain of brochs, unless this is included, I think it is most probable that a broch had once existed here, but, owing partly to the ravages of man and of the sea, the stones have either been washed away or removed for building purposes, or both; and all that we have left is the shell patch or kitchen-midden of such broch. That buildings once existed there, old inhabitants can affirm; but they say these were fishermen's cottages or huts, and that they were dismantled by the sea and by man.

I ought also to mention that the old kirk of St Magnus is supposed to have existed at a spot not more than 30 to 40 yards south of this patch, and that its burial-ground approached even nearer. There can be no doubt that these buildings, both hut and kirk, were entirely unconnected with the shell patch.

#### THE LONG-HANDLED COMBS.

I now proceed to give the results of a detailed examination of these implements. Although numbers of combs of this form have been found and are duly reported in the proceedings of the various Antiquarian and Geological Societies, yet in no place is there given a detailed description of them. Thinking the present find a good opportunity for contributing to a more exact and minute knowledge of these combs, I have endeavoured to supply that want by giving a somewhat minute and detailed description, embracing not only their general form but also certain peculiarities in form; the materials from which they have been made, their ornamentation, comparison with other combs, and interesting data connected with their manufacture, use, and distribution, in the hope that such a description may be of service, not only for future comparison, but in affording another link of evidence that may aid in computing the age of the Pictish brochs, and in furnishing a little more insight regarding the habits and state of civilisation of those who used these implements.



The general description is founded upon the characters of the combs in the possession of this Society, but I have not scrupled to avail myself of the information derived from books and plates, in all cases acknowledging the source of my information.

I wish especially to refer to the very great obligations I am under to Mr Joseph Anderson, keeper of the Society's museum, for his courtesy in allowing me to examine the various specimens of the combs in the museum, and for much valuable information concerning them and others; indeed, it was partially through his advice and that of Professor Turner that I was induced to write this paper.

These combs have had given to them various names, according to the place in which they were found—such as Pictish broch or burgh combs, Kitchen-Midden and Hut-circle combs, long-handled Roman Camp combs, but I think the most expressive and most general term of all is that of *Long-Handled Combs*.

They are made either of bone or deer's horn, more frequently of the latter; Keller has figured one made of yew-wood, which may be said to belong to this class of combs. It is nearly 5 inches long by  $2\frac{1}{4}$  wide; its teeth 10 in number, and  $1\frac{1}{4}$  inch long.

*General Form.*—Elongated, possess two expanded extremities and a constricted middle or body; one end is thick and blunt, the other is bevelled and toothed.

The body and the blunt extremity together form the *handle*, and to the toothed extremity I have applied the term of *dental end*.

The handle has two surfaces whose margins are rounded off more or less in different specimens; one surface generally possesses a variable amount of convexity, whilst the other is often flat.

The convex or *external* surface corresponds to the exterior of the compact outer wall of a long or flat bone, or the hardened external layer of horn; but the flat or *internal* surface presents the characters of a longitudinal section through the cancellated texture of a bone or horn.

The blunt end of the comb is usually its thickest part, and is, in most specimens, slightly concave from corner to corner, but rounded off from surface to surface.

<sup>1</sup> Lake Dwellings, plate 5, fig. 21; text, page 34.

The above may be taken as a typical form of the handle, but there are some combs which vary somewhat.

*Peculiar Forms.*—In some the concavity at the blunt end is present to a marked degree as in the comb found by Mr Benjamin Neeve Peach at Kettleburn,<sup>1</sup> in 1854, now amongst the Kettleburn relics in the museum, in which the distal end of the handle is lobed like the tail of a fish.

Another Caithness broch yielded a comb whose handle, from near the bases of the teeth, tapers sharply to a point, which is surmounted by a large circular knob. This was presented to the Society by Mr George Innes, in 1783.

Madsen<sup>2</sup> mentions several, and figures one of a similar form to the above, but much smaller in dimensions.

The Roman camp combs<sup>3</sup> are similar to the above, except that they are generally surmounted by a square knob.

Mr Farrer<sup>4</sup> found some of these combs with cylindrical handles at a broch in Burray, Orkney.

The combs found in Kent's cavern<sup>5</sup> are similar in form to a shoe-horn, broad at the dental end and narrow at the blunt extremity.

One of the combs found by Mr Petrie in Lingrow broch possesses a similar form, so does the one obtained from the circular building at Uist by Mr Gordon.

Several of the combs possess one or more holes in the handle near to the distal end, probably for the purpose of attaching it to the person by means of a thread or cord, so that it may be carried about by its owner. Such a practice is common among the Esquimaux, North American Indians, and Maories.

Examples of these may be seen in the case of one of Kent's cavern specimens; in both of the combs found by the Rev. Mr Joass<sup>6</sup> in a broch

<sup>1</sup> A Report on the Ancient Remains of Caithness. By Joseph Anderson, Loc. Sec. of Anthropological Society. Memoirs of Anthropological Society, vol. ii., p. 227. 1865-66. Also Proceedings, vol. 6, p. 264; also plate XIII. fig. 2.

<sup>2</sup> Afbildninger af Danske Oldsager og Mindesmærker ved A. P. Madsen, p. 6, Hefte xiii; also plate I. fig. 1.

<sup>3</sup> Proceedings, vol. vii., p. 124.

<sup>4</sup> Ibid. vol. ii. p. 6, and page 157.

<sup>5</sup> Reports Brit. Ass. Committee for 1865-67.

<sup>6</sup> Vide Mr Joass's Paper in Archæologia Scotica, vol. v.

near Dunrobin, Sutherlandshire; in the comb found by Mr Gordon<sup>1</sup> "in a circular building at Uist" (a broch) during 1853; in a comb found at Moosedorf—in this comb there are two holes; in a comb found at Nussdorf, also in a bronze comb found in Terramara. The last three are mentioned and figured by Keller.<sup>2</sup>

*The dental end and the teeth.*—These present great variations in all the combs which I had the opportunity of examining. In those made from sections of deer's horns, or from splinters of the long or flat bones, more especially in those made from the bones of whales, the dental end is bevelled on both sides, but more on the flat or soft side than on the convex side. In those possessing cylindrical handles, where an oblique section has been made through the shaft of the "tyne," bevelling has only been made from one side, and that agrees with the section.

The bevelling generally commences on the surfaces of the handle, from one inch to one inch and a-half from the bases of the teeth.

The teeth may be divided into a central set and a marginal one; each tooth has an attached thick base and a free-pointed apex. Those of the central set each possesses four surfaces and four borders; two of the surfaces are external and internal corresponding respectively with the external and internal surfaces of the handle. The remaining two surfaces are the opposing or lateral surfaces of each tooth. The four borders bound these surfaces, and are best marked near the bases of the teeth; they are rounded off near the apices. This is well seen in the larger Kettleburn comb.

The marginal teeth, two in number, agree generally with the central set, except that they are commonly more massive, and taper more than the other teeth from base to apex, and are usually a little shorter.

Each tooth tapers laterally from base to apex, and also from external to internal surface, but the tapering in all the cases except one, was greater in the latter diameter than the former. The teeth vary in number in different specimens, from six to sixteen. They vary also in size and form, some being short and cuneiform, and only one-fourth of an inch in length, others long and parallel, extending to  $1\frac{3}{8}$  inch.

The interdental notches (between the teeth) are variable in width,

<sup>1</sup> Proceedings, vol. iii., pp.122-124.

<sup>2</sup> Keller's Lake Dwellings.

some being so *narrow* as to scarcely admit the large blade of a pocket penknife, others wide enough to allow a blade three times the above thickness to pass between the teeth; the width of the notches in specimens does not depend so much on the girth of the teeth as on the number of teeth present at the dental end; some are less than one-eighth of an inch in width, others one-fourth of an inch.

The "mode of implantation," if such a term is here allowable, is also important. In the typical specimens, the whole series of teeth, from their bases to their apices, usually are quite parallel, and if there is any convergence, it is so slight as to be with difficulty perceptible. In a few, the series diverge so that the width of the dental end at the apices of the teeth is greater than at the bases. Both the convergent and divergent forms have their analogues in the two kinds of combs used by the Esquimaux of the present day. Again, in one of the Hillswick combs, the teeth are set obliquely to the axis of the handle; this also occurs in other combs. In some of the rude specimens, from the bases of the teeth grooves proceed along the bevelled portion of the external and internal surfaces of the handle; these grooves are continuous with the interdental notches, where they are best marked, but they become shallower and more indistinct at the *a-dental* end of the bevelled part of the handle. They are slightly narrower in width than the interdental notches; they vary in length, not only as compared with one another in the same comb, but also in different combs, and they are more deeply indented in the internal cancellated or softer surface of the comb, than in the external harder shell of the comb. In many may be seen a faint ridge or ridges, at the base of the groove, dividing it into two or more secondary grooves, and most commonly when these secondary grooves are present, they are not parallel to one another.

Again, in many combs, and especially in those that possess the grooves, the opposing surfaces of the teeth have oblique marks, running with a greater or less amount of obliquity, from one side at the base, towards a portion of the opposite side near the apex; those commencing at the base near the internal surface, crossing those which begin at the base, near the external surface, and vice versa. The interdental notches of combs possessing the above grooves and oblique marks, have, without a single exception, clogged and unfinished bases; a small conical projection of



bone having been left in the cutting, in the bases of each interdental notch between the teeth.

This contrasts strongly with what we see in the well finished combs, possessing sharp and clean teeth without marks, interdental notches well cut down, and a handle, whose bevelled end is devoid of grooves. If careful examination of the teeth of these combs be made, there will, in almost all specimens, be found transverse markings on the surfaces of the teeth, nearer to the apices than to the bases; these are marks caused by the use of these combs, and will be considered in another part of this paper.

*Microscopical Structure.*—As yet I have only examined the structure of one comb under the microscope; I am indebted to Mr Stirling, of the Anatomical Museum, Edinburgh University, for having kindly mounted for me the sections. They were taken from one of the Hillswick combs, and compared with some sections made from the bones of a long-armed Cape whale, which, from having been subjected to similar influences, and being in a similar condition, permitted a comparison being made.

The late Mr Quekett, the distinguished histologist, in a note to the "Archæological Journal," about the comb found at Kettleburn, said that that comb, and two spheroidal bone balls, which were found along with it, were made from the lower jawbone of a whale.

Now, from an examination of these sections by the microscope, though I could not positively assert that the comb examined was made from a whale's bone, still less that it came from any particular bone; yet I can say, that the appearances presented by the different parts of the osseous tissue in the comb are similar to those seen in sections made from the bones of the Cape whale. With this exception, that the decay has gone on for a longer period in the comb, we have the canaliculi more molecular, and the lacunæ somewhat more blurred from the deposition of the earthy particles; yet the Haversian system, the grouping of the lacunæ, and the characters of the canaliculi, have the same general appearance in both.

*Manufacture.*—In treating of the mode in which these combs have been made, and of the kind of implement, stone or metal, that may have been employed to form the teeth, I shall limit myself to bringing forward certain facts, and of drawing provisional inferences from these facts.

There can be little doubt that the bones or deer-horns out of which these



combs were made must have been in a comparatively fresh state, for the structure of horn or bone becomes more and more brittle, in proportion as the animal matter is lost, either by age or weathering; and if old bones had been used, in addition to the greater difficulty of cutting long teeth without breaking them, we would expect cutting grooves, where present, with chequered and broken margins, which is not the case in any I have seen. Only two kinds of bones were used, viz., the long and the flat bones. In the former, there is a thick, compact, hard, and ivory-like portion externally, and a cancellated and softer texture internally, and in those combs made from splinters of long bones the compact tissue predominates. In the tabular bones, we have a much thinner compact portion, but a more closely cancellated centre; and in those combs made from these flat bones, the cancellated texture predominates, though here the hard compact portion has been taken advantage of. Although there are three kinds of horn, yet only one kind seems to have been used, viz., that belonging to "Cervideæ," and when the horns of these animals have been stripped of the "velvet," then we have essentially a bony structure, consisting of a spongy centre, the spaces of which gradually become smaller and smaller, as it merges into the compact tissue of the horn, there being no sharply defined line between the compact and the cancellous texture. The bone composing these horns approaches somewhat in properties the bones of young animals, which are softer than the old bones. Hence this may account for the fact, that horn seems to have been employed in preference to bone, in many cases since it could be more easily cut. Concerning the kind of instrument employed in their manufacture, I have come to the conclusion that saws, or some implement with a filing or serrating edge, were used in cutting the teeth of these combs, for the following reasons:—

If the grooves running from the bases of the teeth along the bevelled part of the comb be examined, it will be seen that the bottom of each groove is equal in width to its "lips," whereas, if a knife had been employed, the base of the groove would have been much narrower than the lips, and a cross section of the groove would have had the form of the letter V., the limbs being the sides of the groove, and the angle of junction the base. Besides, if we attempt to cut a new bone, and more especially a brittle old one, with a knife, the groove made is

neither so well defined, nor so clean as one made by a saw, the compact tissue splitting and cracking, owing to the great pressure of the knife's edge, and the lips of the groove being broken and jagged. The hardness and compactness of the bone or horn cut, the characters of the above grooves, also of those on the opposing surfaces of the teeth, the characters of the cuttings and marks on the broken bones, and other implements that have been found along with these combs, the comparative width of the interdental notches in most of the typical combs, the presence of flint saws among the finds in the lake dwellings, where some combs belonging to this class have been found, the use of saws in the present day, in cutting the teeth of combs and other things,—all tend to show that saws have been employed.

I am aware that as yet no saws have been found in the *brochs*; and as for flint implements, they are generally the exception, though some were found in the black mould over the stalagmitic layers in Kent's Cavern, in conjunction with combs of this class. I also know that saws of metal, of the bronze and iron periods, are very scarce, if any at all exist, and that the interdental notches of some combs are so narrow as to preclude the idea of stone saws in some cases having been used. Yet it must be borne in mind, that if metal saws were employed, and I believe they were, it is more than likely that they were iron ones, for there is no doubt but that some of the earlier dwellers of the *brochs* were co-temporary with the

Roman invaders. Consequently, if such a period has elapsed since these saws were made or employed, or even if only a century had elapsed, knowing as we do the physical properties of iron, and the influence and conditions which any iron implement, especially one fine enough to make the grooves and interdental notches of a comb, or the cuttings we see on various bones

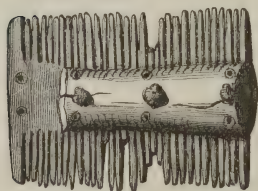


Fig. 1. Natural Size.

found among the *broch* relics, must have been subjected to since its deposit, I need have little fear of being stigmatised as rash in assuming that such an implement did exist, and was used in their manufacture.

Nor is such an assumption unfounded, since to any one conversant with the subject, it will be seen that the very nature and disposition of

the materials found in these brochs would favour the rusting away of any iron implement deposited in them. For independent of the moisture which naturally must exist in and about buildings lying in a low situation, either built on the arms of the sea, or partly in some inland loch, or in the midst of some undrained mossbog or morass, we have the walls of such buildings partly broken down, the huge stones jumbled against one another, leaving underneath or between them little crevices, in which carbonic acid and moisture may collect; we have a soil infiltrated with, and indeed partly composed of, organic substances, such as broken and splintered bones, the remains of feasts and slaughterings, certainly the most favourable conditions for producing rust.

Indeed, Mr Farrer found, in the broch of Burray, Orkney, a small portion of a double-margined comb, with remains of an iron knob or rivet projecting from its centre (fig. 1). He also obtained from the same place some buttons of bone, with iron knobs projecting out of them; and from another broch he got another double-margined comb, also rivetted with iron. These were found along with long-handled combs, and in both cases the iron is only rusted at the ends. Here, although the imperfect conducting power of the bone may have interfered with the species of voltaic action which is produced in the rusting of iron, it would not wholly prevent it, yet, by protecting the shaft of the rivet, it did tend to preserve the iron.<sup>1</sup>

Again, Sir John Lubbock<sup>2</sup> mentions about several implements that were found at Thorsbjerg, in Slesvick, in which "the iron has been almost entirely removed," owing to chemical action, and the handle of bronze and wood are perfectly preserved." But if the negative evidence of the use of iron saws is not permissible, then it does not seem to me at all improbable that the margin of a shell might have been used; indeed, there are lots of natural articles which would subserve all the purposes of a saw, but which, until I have further investigated the subject, I forbear mentioning. That the cutting implement was made of metal is rendered more likely by the fact, that in almost every find bronze and iron articles have been found associated with these combs. As yet, the chief difficulty lies in the fact, that it is almost impossible to separate what implements

<sup>1</sup> "Miller's Elem. of Chemistry, 4th edition, part ii. pp. 579 and 580.

<sup>2</sup> "Prehistoric Times," 2d edition, pp. 8, 9.

belongs to one or what to another of the successive generations who occupied these brochs. Concerning the manner of cutting them, there may not be the same differences of opinion.

Mr Joseph Anderson<sup>1</sup> says, "the idea of the artist who fabricated the comb from a shank bone was evidently to make a rude imitation of the human hand, with its fingers outstretched," and it certainly does look as if this had been the case. Let us see how he set about it.



Fig. 2. One-half Natural Size.

Regarding the instrument figured by Mr Laing in the Proceedings of the Society<sup>2</sup> as one of those combs partly made, it would appear from it, and a careful study of the other combs, that the handle is formed, and the dental end bevelled to some extent, before the teeth are sawn or cut; and when these are cut, they are sawn from both surfaces of the comb,<sup>3</sup> just in the same way that a tyro-carpenter is often seen using a saw of a certain breadth, with a back to it, to cut through a log of wood, the diameter of which is much greater than the breadth of the saw. This sawing from both sides would account for the oblique grooves on opposing surfaces of the teeth (Pl. XVIII. fig. 2), commencing both at the internal and external surfaces, and also for the grooves on both surfaces of the bevelled portion of the comb, being deepest near the bases of the teeth. In some combs, after the above rough cutting is done, they are used without any further finishing; in others, the interdental notches are sawn *clean*, that is, the small portion of bone at the base of the teeth, which is left

<sup>1</sup> Anthropological Soc. Memoirs, vol. ii. 1865-66, p. 228.

<sup>2</sup> Vol. vii. p. 83. *Vide* also pp. 67 and 68, or fig. 2 above.

<sup>3</sup> This was suggested to me on reading about "a deerhorn handle rudely sawn at one end and rounded at the other, the sawing having been done from opposite sides," found in a Piet's house at Old Stirko—*Vide* Anderson, vol. ii. "Anthropological Memoirs," 1865-66, p. 231.



in the unfinished specimens, is removed, so that the plane of the base of the interdental notch is at right angles to the internal and external surface.<sup>1</sup> The grooves upon the bevelled portion are effaced by further bevelling, the margin of the teeth are rounded off, and the comb is ornamented or polished. The handle is hollowed out by means of shavings cut<sup>2</sup> away by a knife or some sharp-edged implement, and in some grinding seems to have been resorted to. In the Kettleburn Comb (fig. 3, p. 134) a straight line had evidently been cut before the teeth were made, on a level with the intended bases of the teeth, showing, probably, that these people mapped out the length of the teeth before they began to cut them.

*Ornamentation of the Combs.*—The ornamentation of these combs varies, and consists—1. Of single or parallel straight lines,<sup>3</sup> either running directly across the body of the comb, or crossing one another, or both combined; found chiefly in broch combs. 2. Of concentric circles,<sup>4</sup> either grouped or distinct, sometimes confluent, as in those found in Roman camps. 3. Of parallel arranged zigzag lines, as in Kent's Cavern specimens. 3. Of carved figures, as in some which were got in Mexico, and are now in the British Museum.

The Rev. Mr Joass found in the Carn-liath Broch a comb,<sup>5</sup> in which the external surface possesses two arcs of a circle running crossways, the ends of each arc being at the margin of the surface, and their convexities facing one another, one arc being at the blunt end, the other at the dental end; between the extremity of one arc and the opposite end of the other arc, stretches a straight line, which is broken at its middle by a hole.

The ornamentation generally, but especially that of the *broch variety*, is on the convex surface of the handle, and more frequently grouped near the dental end. Exceptions do occur—for example, in the large Kettleburn Comb; and in No. II. of the Hillswick Combs (Pl. XIV. figs. 1 and 2) there is slight ornamental marking on the flat side also. I fancy, though I am not perfectly sure, that ornamentation on both sides is the rule rather than the exception, in the Roman camp variety, and those true

<sup>1</sup> For explanation, *vide* Pl. XVIII. figs. 1, 2, 3, and 4.

<sup>2</sup> Well seen by the markings on the handle, *vide* addenda.

<sup>3</sup> Pl. XIII. fig. 1, and Pl. XIV. figs. 1 and 2; also fig. 3, p. 134.

<sup>4</sup> Pl. XIV. fig. 3; Pl. XV. figs. 8, 9; also Pl. XVI. fig. 4.

<sup>5</sup> Pl. XVI. fig. 1.



long-handled combs of the Swiss lake dwellings. In the broch variety, in all the combs I have seen, the markings are more or less *rude* and *asymmetrical*, and they appear to have been made with a knife, for in some, but especially in the Hillswick Comb, No. II., the knife evidently has slipped whilst in the act of making a straight line, and another line has been made at an angle with the previous line. Again, in the above comb, where we have a series of three closely situated parallel lines, crossing one another diagonally, and these again between two series of three lines, which run transversely from margin to margin of the comb, in some of the series only two lines are present, and a faintly marked portion of a third. In another series it commences with four lines, but soon the fourth line is given up, as if it had been an abortive attempt.

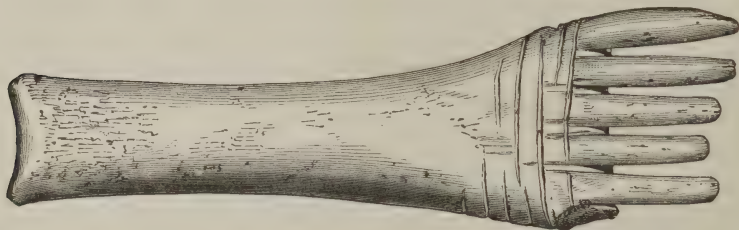


Fig. 3. One-half Natural Size.

In the Kettleburn Comb (fig. 3) it consists either of parallel lines running across the comb at right angles to its long axis, or of portions of such lines placed at irregular intervals. Where lines are present on both surfaces, they are not continuous one with the other, but appear to have been made distinct from the rest. The marks bear characters of a knife having been propelled backwards and forwards like a saw in making them.

Some of the broch combs possess here and there a coarse rude mark; one comb has on its smooth surface two shallow lines crossing one<sup>1</sup> another, partly effaced. The variety whose surfaces are ornamented with dots and concentric circles occur chiefly in England, and universally in connection with the so-called *Roman camps*.

<sup>1</sup> Addenda, comb 9.

*Where Found.*—As generally indicated in my preceding remarks, these combs have been found in brochs or similar buildings, in kitchen middens or shell mounds, in bone caves (as Kent's Cavern), and in chalk pits; and their characters differ with the character of the place where they were found.

*Comparison with Analogous Implements.*—The true typical long-handled combs do bear some resemblance to those at present in use among barbarous and semi-civilised tribes, such, for example, as the North American Indians, Hottentots, and the Eskimo. And laying aside the differences in finish and ornamentation, as being too difficult to determine what is peculiar to these tribes and what has been contracted by contact and intercourse with civilised races, we will consider their agreements and disagreements.

There are two forms of Eskimo combs, one in which the whole series of teeth converge from base to apex, the other in which they diverge, that is, the apical end of the dental portion is much wider than its basilar end. In the convergent toothed comb, which is by far the most common of the two, the teeth are larger and more tenuous, and the interdental notches are no wider between the apices of the teeth than they are betwixt the bases. The comb itself is thin, wide, and short, and its two surfaces are quite flat (*vide* Pl. XVII. figs. 13 and 14).

In the second variety of the Eskimo comb the body, the handle, and the tenuity of the teeth is the same, but they diverge so that the interdental notches are much wider between the apices than at the bases of the teeth. The interdental notches of the true or typical long-handled comb also diverge; but the teeth are not, as in the above cases, long, thin, and of equal thickness throughout, but possess the characters which I have before enumerated; then between the broch combs and these combs there is a great difference in the general form and in the characters of the body.

The combs in use among the North American Indians approach more in form those found in the Danish shell mounds. They are smaller in size, and comparatively narrower than the Eskimo combs. Mr Edward S. Stevens<sup>1</sup> refers to the likeness existing between these long-handled combs and some implements "in recent use by the Eskimo for scraping fat,

<sup>1</sup> Flint Chips, p. 64.

&c., from the backs of skins; the Eskimo tools are made of wood, with the sharp claws of birds lashed to them." He says,—“In the Christy Museum there are examples of these; in the same collection there is a Basuto tool, used for a similar purpose, the short thick teeth of which are of iron, bound to a wooden handle with twisted fibres.” Here the likeness exists only in the general form; for, as before stated, the broch combs are made from a single piece of bone; whilst these are made, not only of different materials, but also of several pieces. The Society possesses one of the most typical Eskimo combs,<sup>1</sup> and the British Museum possess all the forms of the above combs.

Differences of a like nature to those subsisting between the Indian and Eskimo combs separate the Danish combs from the typical long-handled combs. Such as those found in the Danish shell mounds, and figured by Worsaaë.<sup>2</sup> Some of these are wide, and approach in character the ordinary Roman or Saxon single-margined combs; others are more allied to the Eskimo and Indian combs. The latter are chiefly bronze combs.

Professor George Stephens, in his grand work,<sup>3</sup> mentions and describes a bone comb which was found in a moss, along with some dozens of the same form. Then two bone combs were found at Ickleton and Chesterford, along with some Roman coins<sup>4</sup> (Plate XVII. fig. 12). Mr F. W. Wakeman,<sup>5</sup> in speaking of the Irish antiquities of the Saxon period, also mentions and figures several of the Irish combs; these are much ornamented. All the above combs are in general form and character of the teeth halfway between the Eskimo combs and the ordinary Saxon single-margined comb. In the museum attached to John Knox's house, in this city, are two wooden combs identical in general character with those figured by Stephens *ut supra*.<sup>6</sup>

<sup>1</sup> Proceedings, vol. v. p. 126; also Pl. XVII. fig. 13 of this paper.

<sup>2</sup> *Afbildninger fra Det Kongelige Museum for Nordiske Oldsager*, p. 15, fig. 63; p. 45, figs. 179–181.

<sup>3</sup> *Old Northern Runic Monuments, Scandinavia and England*, part i. p. 305.

<sup>4</sup> *Archæological Journal*, vol. vi. p. 17.

<sup>5</sup> *Collectanea Antiqua*, by Charles Roach Smith, *Archæological Jour.* vol. iii. p. 43.

<sup>6</sup> I am indebted to Dr John Alexander Smith for the knowledge of the above two combs. Where they came from is unknown, but it is supposed that they came from some of the tribes around Old Calabar.

Among the combs found in Swiss lake dwellings, those two figured by Keller,<sup>1</sup> in Pl. lxiii., may be looked upon as being more connected with the Eskimo combs than the typical long-handled comb, the only marked difference between them and the Eskimo consisting in the fact that they are made up of several pieces of bone, and the interdental notches are much narrower. The Moosedorf yew-wood comb,<sup>2</sup> the three bone combs found at Nussdorf,<sup>3</sup> and the bronze comb of Terramara,<sup>4</sup> also the cast<sup>5</sup> of a bronze comb figured and described by Keller, I regard as being intimately connected, both by general form, characters of teeth, and size, with the long-handled combs. Similarly, though much smaller in size, those combs mentioned by Madsen,<sup>6</sup> some possessing three, others four, others seven teeth, and of which he gives a figure of one,—these, too, must be looked upon as a variety of the long-handled form. Most of the above combs have evidence of use in the presence of small transverse grooves on the surfaces of the teeth, similar to what I pointed out as existing among many of the broch combs.

It may not be out of place to mention, that certain of the so-called back-scratchers have a certain resemblance to the broch combs; indeed, some bronze articles,<sup>7</sup> called by the above name, which I saw in the antiquarian department of Sir William Brown's Museum, Liverpool, are identical in general form and in their teeth to that comb which was presented to the Society by Mr Innes in 1783.

The typical long-handled combs have peculiarities in form and ornamentation, which are coincident, not only with the kind of place in which they were found, but also in their distribution. The English combs are as distinct from the Scotch combs as the latter are from the Eskimo.

<sup>1</sup> *Loc. cit.*, p. 229, pl. lxiii. figs. 6 and 15. (Worsaaë has also figured these.)

<sup>2</sup> *Loc. cit.*, p. 34, pl. v. fig. 21.

<sup>3</sup> *Loc. cit.*, p. 114, pl. xxviii. fig. 8. } *Vide* also addenda of this paper, and

<sup>4</sup> *Loc. cit.*, p. 299, pl. lxiii. fig. 7. } Pl. XVII.

<sup>5</sup> *Loc. cit.*, p. 299, pl. lix. fig. 9.

<sup>6</sup> *Afbildninger, &c., loc. cit.* part xiv. pp. 6 and 7; *vide* also Pl. XVII. fig. 4 of this paper.

<sup>7</sup> I am of opinion that these will turn out to be combs, if properly investigated, especially so, when one sees the marked difference between them and the back scratchers of the Japanese, the South Sea savages, and other barbarous tribes; indeed, the back scratchers of the South Sea savages are very like the Eskimo skin-scraping tool, or the Basuto implement.



I shall not enter upon the question of the relation of these combs to the single and double margined combs; let it suffice that I think they belonged in many cases to the same people, were used for different purposes. All the broch combs are similar in form to that I have detailed in the typical description. Those found in so-called Roman camps are more or less knobbed, and differ from the broch forms besides by having flat surfaces and sharp square margins; and *similar* differences exist as regards their ornamentation. It is rather a curious coincidence, that the same kind of ornamentation which is found universally on the Roman combs, viz., the dot and concentric circles, has been discovered to exist on many of the stones or slabs found in the Pictish brochs and houses, and yet, so far as I know, no combs with this ornament have ever been

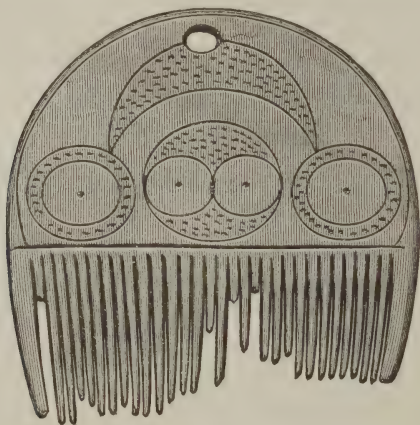


Fig. 4. Natural Size.

found in these brochs. Again, on not a few of the sculptured slabs of Scotland representations are present of double-margined combs, the domestic animals, birds, fishes, &c.; and the brochs, when excavated, yield the bones of the very same kind of creatures that are figured on the stones. But the coincidence goes still further, for Dr John Stuart points out, that on the sculptured slabs of Scotland “the geographical distribution of the symbols—the comb (fig. 4) and of the comb and mirror (fig. 5)—is as follows:—



	Comb.	Mirror and Comb together.
"Between Rivers Forth and Dee, . . . . .	8	6
Between Rivers Dee and Spey, . . . . .	7	7
North of Spey, . . . . .	5	4
South of Forth, . . . . .	0	0"

So likewise, to the best of my knowledge, all the typical long-handled combs of the broch form occur north of the Forth.

A great variety of uses have been assigned to these combs by various authors. Montfaucon thought they might have been used as instruments of torture. A glance at the general form and characters of the markings on the teeth of the combs will soon dispel so ferocious an idea. Nor has that very commonly thought opinion, that they were employed in dressing and ornamenting pottery, much more support than the weak legs of supposition to rest upon.

Again, by confounding them with those implements in use among the Eskimo, North American Indians, and certain of the South Sea savages,

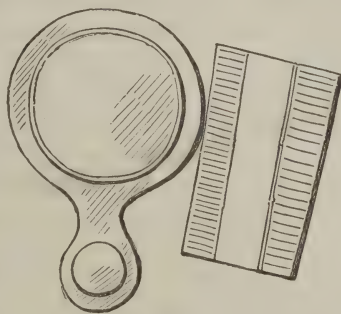


Fig. 5.

for taking off the fat from the inside of skins and furs, and which consist of an oblong piece of wood, having lashed to one end of it, in such a manner that they may project, three or more birds' claws, many have been led to believe that the long-handled combs were used for the same purpose.<sup>1</sup> That such is not the case, a careful consideration of what I have already said when comparing them with the above imple-

<sup>1</sup> Some of the implements used by the Fijians for this purpose are made of the teeth of animals lashed to a piece of wood from the cocoa-nut palm. Their back-scratchers are also like the above. Mr Williams, the missionary among the Fijians, mentions that "their priests possess as among the sacred insignia of their office, a long-toothed comb." I have shown some of these to the Society; they are made of several slender pieces of cocoa-nut wood, lashed together by fibres of grasses. Some are made from reeds. *Vide* Pl. XVIII. fig. 11.

ments; and to speak more dogmatically, I may mention that the two kinds of implements are so distinct in form and use from each other, that I only compared them so that I might not be accused of having overlooked them.

The Maories carry wooden combs about as mere ornaments, and some have even considered the long-handled combs were put to the same use. Such I doubt; but there is more probability in the opinion, that they were used for combing the shaggy locks of their owners, since combs allied to them and the common Eskimo combs were in use a few years back in reducing to order not only the hair of the living, but also the scalp locks of the slain warriors, while the scalps are undergoing the preparatory processes to fit them for decorating the person of the slayer. And I exhibit a photograph, *vide* Pl. XVIII. fig. 8, of a girl of the Seshaaht tribe, representing the manner in which such a comb is worn on the head. The females of that nation are evidently behind the age, while the females of our nation have become more than imitators of the practice in vogue by the simple Eskimo girl. That such an use is not improbable I do not deny, yet the other two uses which have been assigned to these combs seem to my mind more feasible, viz., either that they were employed in keeping disentangled the threads of rein-deer sinew whilst plaiting it, or for the combing of wool flax.

Dr Robert Brown, a well-known traveller among the Eskimo and the Indian tribes of North America, kindly gave me several facts about these combs in a letter, part of which I now copy:—"I am strongly inclined to believe that the use of this Shetland comb was to separate the strands while making sinew thread; the tendon, in order to make it, is steeped in water, then flattened out by beating, and the whole mass separated into threads by tearing out with a comb like this. This is the method in use among the Eskimo, the North American Indians, and indeed all tribes which now use sinew thread." "*The combs found in the Danish kjökkenmoddings*" [the italics are mine] "are to all intents and purposes the same as the Eskimo comb for separating the sinew threads; and to make the likeness more remarkable, at the base of the teeth could be distinctly seen the transverse markings caused by tugging the thread mass from side to side, in order to separate the fibres." But from a careful examination of the marks of wear on the teeth of the

long-handled combs, I think they were employed rather in combing fleece, flax, or hair, than rein-deer skein. The transverse marks on the surfaces of the teeth are not so wide nor so well marked as one would expect if they had been used to disentangle coarse sinew threads. Then, as Dr Brown remarks, not only the Eskimo combs, but all the Danish shell-mound combs, have these transverse marks of wear near the base, whilst in almost all the typical long-handled combs I have had the opportunity of examining, these marks are nearer to the apices than otherwise; and, according to sketches, such seems to be the case in that one figured by Madsen, and in several of the Swiss combs. In the former case, the threads being in the water, there was nothing to oppose the thrusting of the comb well down among the thread mass, since there would be little fear either of damaging the teeth or of scraping them against any hard substance; but in the latter, whether the comb was used for combing wool, flax, or hair, it is quite evident either that care was taken not to bury the teeth too deeply in the material, or that such material was not in sufficient thickness to allow the teeth to become immersed up to their bases, and the points of the teeth, if opposed to anything, it must have been some soft substance.

The marks on the long-handled combs, however, make it apparent that, whatever was the material used, it was of sufficient length to allow it to wind round each tooth, so that in some cases, if the comb had been employed much more, the ends of some of the teeth would have been cut off from wear. From the results of experiments I have made with combs on wool, from the fineness of the transverse grooves of wear on the teeth, from the position of such grooves, and from the microscopic anatomy of wool, I am inclined to favour the idea that these combs were used chiefly for combing or carding wool or fleece.

Nor is hand-wool combing new, for Mr Joseph Anderson pointed out a passage to me in the *Senchus Mor*, the ancient laws of Ireland, in which the following words occur:—"For the wool bag, *i.e.* the bag which she has at her pes, *i.e.* foot, out of which she combs the material, that is, the combing bag." But in connection with this it should be remembered that no combs of the long-handled form have yet been found in Ireland, and the only combs approaching this form are some which resemble those got by Stevens from a moss in Denmark. Again,

Archbishop Potter, in his "Archæologia Græca," says, that Julius Pollux enumerates at great length the furniture and utensils of the Grecian women's lodgings, among which are instruments for spinning and weaving, baskets for the wool measures (*ἀγνῆς*, or the *λεία*), a *comb* (*ξύριον*), a card for combing wool, &c.

Among the many interpretations of the comb symbol on the sculptured slab stones is that in which it is said to indicate that a wool-comber sleeps below. The older Latin dictionaries of about the sixteenth century afford additional evidence that combs were used in weaving. Thus we have "*Carninare*, to comb, or card wool; to heckle flax or hemp." *Pecten lanaris*, a weaver's slay; a wool-comb; a wool card; a hatchel." "*Carpere lanam*, to comb wool, &c." Macaulay, in his "Lays of Ancient Rome," tells how Virginia warbled the lines of the good old song—

"How for sport the princes came spurring from the camp,  
And found Lucrece combing the fleece under the midnight lamp."

In concluding, allow me to state, that the study of these combs points plainly to the facts—

1. That the Romans, the broch dwellers, and the inhabitants of the Swiss lake habitations, used tools possessing a remarkable similarity in form and make, and probably for the same purpose, whether or not this similarity was produced by other things, than that all were subjected to similar conditions of life, and consequently compelled to resort to similar methods and to similar tools, it is difficult to say.

2. That at least in the make of these combs, the Roman can scarcely be said to be better than the broch dweller; for although the Roman combs, both by their general finish and their special ornamentation, indicate generally the use of more complex instruments, and probably of a higher grade of intelligence to produce them; yet there are some of the broch specimens, which, if ornamental forms and marks be left out of the question, are equally as well formed and quite as well finished as the Roman combs; not that I wish to say the broch dwellers were wanting in æsthetic culture, but that their idea of symmetry and beauty was marred evidently by want of proper instruments to exhibit it objectively.

3. That the varieties of these broch combs, both as to form, finish, and



rudeness, may be due either to successive generations occupying the brochs at different times, as is shown by many of the finds to have often been the case, or to different classes occupying the broch at the same time.

4. There can, however, be no doubt of the fact that, to produce these long-handled combs, and also double-margined combs with rivets of iron, or single-margined combs with handles like that found at Kettleburn, there must have been some of the generations who possessed greater manipulative skill and more delicate instruments than what the explorers of brochs have yet discovered, or we are in the habit of giving them credit for.

And just in the same way that our past ideas of the progress these people had made in the arts of life required modification, it may be subsequently found that the intellectual acquirements and accomplishments of the broch dwellers were neither so few nor so simple as has hitherto been supposed.

I am sorry that excess of my ordinary duties and ill health together prevented me using up all the material I have by me, and completing the paper as I wished, but I hope to do that by a future day.

For very kind and copious replies in return to my queries, my gratitude is due to the following gentlemen:—Robert Brown, Esq., Ph.D., F.R.G.S., Edinburgh; A. W. Franks, Esq., A.M., &c., of the British Museum; the Rev. George Gordon, LL.D., Cor. Mem. S.A. Scot., Birnie; Rev. Mr Sutherland of Northmavine, Shetland. For the loan of sketches—Rev. Mr. Joass, Cor. Mem. S.A. Scot., of Sutherlandshire; George Petrie, Esq., Cor. Mem. S.A. Scot., Kirkwall. And for assistance in obtaining the materials from the kitchen-midden—Mr John Anderson, merchant, Hillswick.



## ADDENDA.

## NOTES OF THE COMBS IN THE SOCIETY'S MUSEUM.

## COMB 1.

Long-handled Comb found in ruins of a Pictish broch in Caithness, by G. Innes, Esq. in 1783. Form of handle usual, except body much constricted, and ends in a knob. Made from a long bone. Ornamentation none. Scratches, as if from gnawing, on convex side. Length of comb,  $4\frac{1}{4}$  in.; girth at dental end,  $3\frac{3}{4}$  in. Diameter of knob,  $1\frac{1}{8}$  in.; girth at constricted part,  $1\frac{3}{4}$  in. Teeth, 8 in number—5 present, 3 partially broken; set obliquely to axis of comb. Length of teeth,  $\frac{7}{8}$  to 1 in., middle ones longest. External teeth usual form. Interdental notches,  $\frac{1}{3}$ th in. wide. Cutting grooves at bases. Indication of a narrow instrument having been used. Borders of teeth near bases have marks of wear (Pl. XIII. fig. 3).

## COMB 2.

Comb of Burgh of Burgar, Evie, Orkney, 1825.—*Vide* Archæologia Scotica, vol. iii. 1831, p. 44, pl. v. fig. 3. Found along with human skeleton and part of a deer's horn. Made of horn, typical in form. Length,  $4\frac{1}{8}$  in.; girth at most constricted part,  $2\frac{1}{2}$  in.; at dental end,  $3\frac{1}{4}$  in.; at blunt end,  $2\frac{3}{4}$  in. (barely). Ornamentation (*vide* fig.). Teeth, 9 in number; typical in form. Length of each,  $\frac{5}{8}$  in.; have marks of wear on exterior (Pl. XIII. fig. 1).

## COMB 3.

A. H. Rhind's Kettleburn Comb. One side convex, with ornamental marks; other concave at dental end and cancellated; made from a long bone. Length,  $6\frac{1}{4}$  in.; girth at dental end,  $4\frac{1}{2}$  in.; at blunt end,  $2\frac{1}{2}$  in. (good). Teeth, 6 in number; an external one is broken away; they are large, clumsy, and wide apart; remaining external one is longest. Cutting grooves at bases. One of cutting grooves passes through one of the transverse ornamental lines. Ornamentation on convex side has near dental end two complete transverse lines and six incomplete ones. Internal concave surface has two; one complete near the teeth, and another at a little distance incomplete. Stone vessels, implements, bronze tweezers, iron weapons, &c., found along with it; also next comb. *Proceedings*, vol. i. pp. 264 and 269; and vol. ii. p. 134. *Mems. Anthropolog. Soc.* vol. ii. p. 227. *Archæolog. Jour.* vol. x. p. 223, contains Quekett's examination of bones found at Kettleburn. He says, "This comb, and some spheriodal bone balls which were found along with it, were formed from the lower jawbone of a whale; several small portions of whose osseous structure were likewise found in an unmanufactured state. (*Vide* woodcut, fig. 3, page 134).

## COMB 4.

Same references as last comb. Found at Kettleburn, by Benj. Neeve Peach in 1854, in a Pictish broch. Body has a constricted middle, and a fish-tailed distal end. Made of long bone of some animal. Compact wall of bone = convex surface. Cancellated texture = concave surface. Very little cancellated texture left. Length,  $4\frac{1}{2}$  in. Distance between lobes at distal end, 2 in. Girth at dental end,  $3\frac{1}{2}$  in. All the teeth except one broken away. From characters of stumps interdental notches are wide (Pl. XIII. fig. 2).

## COMBS 5, 6, 7, AND 8.

Found by James Farrer, Esq., M.P., in the broch of Burray, Orkney, along with a portion of a double-margined comb. Among other articles found were stone implements, body of vertebra of a whale hollowed, bone scoops, bones with holes drilled through them, bone pin, part of a bone wheel, and part of lower jawbone of a whale.—Proceedings, vol. ii. p. 6; also p. 157.

Comb 5 (these numbers are affixed to combs in Museum). This is a very rough and rude comb, made from shaft of a deer's horn, which is naturally grooved longitudinally, is rounded and rough bevelled at the dental end from one side; is a tyne obliquely cut. Extreme length,  $4\frac{1}{2}$  in. Girth of body,  $4\frac{1}{2}$  in.; at distal end, ditto; at dental end,  $3\frac{1}{2}$  in. Teeth, 9 in number, short and wedge-shaped; broad at base or attached part, with a free round apex; hardly  $\frac{1}{2}$  of an in. in length grooves of cutting well seen. Teeth present near apex; transverse shallow grooves as if worn; but in an indifferent state of preservation (Plate XV. fig. 1).

Comb 6. Better finished than Comb 5. Made of horn, also grooved longitudinally; from roundness and size most probably red deer. Extreme length, 6 in.; girth of body and end,  $3\frac{1}{2}$  in.; girth at bevelled dental end,  $3\frac{1}{4}$  in. Body is round, not constricted; dental end an oblique section made from one side to the other; cancellated structure coarse; and the compact, thin. Teeth irregularly cut, do not possess any transverse marks, but cutting grooves, seen on the surfaces of the handle for an inch or more, are 11 in number (Pl. XV. fig. 2).

Comb 7 is round, and made from horn. Length,  $4\frac{1}{2}$  in.; girth at body and end,  $3\frac{1}{2}$  in.; girth at dental end,  $3\frac{1}{4}$  in.; it expands near dental end slightly. Bevelled in a similar way to 6 and 7. Teeth, 10 in number; 6 present, rest broken; teeth are sharp, from cancellated texture having been worn away. Surfaces of body bear marks of cutting (sluices have been shaved off). Dental surface has a transverse ornamental mark (Pl. XV. fig. 3).

Comb 8. Made of horn, longitudinally grooved. Length,  $4\frac{1}{2}$  in.; girth between the ends,  $2\frac{3}{8}$  in.; at tail end,  $2\frac{1}{4}$  in.; at dental end,  $2\frac{1}{4}$  in. External surface of comb smooth; internal surface rough (cancellated). Comb tapers from teeth to distal end. Teeth, 7 in number—4 present, 3 broken—are narrow and tenuous. Cutting grooves present to the extent of 1 in. Transverse marks of wear near the apex of teeth (Pl. XV. fig. 4).

## COMB 9.

Made of bone, probably whale. External length, 6 in.; girth at constricted part,  $2\frac{3}{4}$  in.; girth round dental end, 4 in.; tail end,  $3\frac{3}{4}$  in., expanded. Comb has both surfaces flat, margins rounded, one smoother than the other; tail end notched obliquely. Teeth, 7 in number; vary  $1\frac{1}{4}$  in. to  $1\frac{3}{8}$  of an inch in length; average 1 in. in girth; are flat, strong, and parallel; central teeth longest; interdental notches wide. Smooth surface of comb has near dental end two lines crossing one another; these are pretty broad and shallow. Not known where found (Pl. XIV. fig. 5).

## COMB No 10. Proceedings, vol. iii. pp. 122, 124.

Gordon's Comb, found in a circular building at Uist, made of horn, grooved in longitudinal direction; length, 4 in.; girth at one end,  $2\frac{1}{4}$  in., diverges to  $4\frac{3}{4}$  in.; hole,  $\frac{1}{4}$  in. in diameter, near distal end. 8 teeth, which diverge very much; teeth,  $\frac{3}{4}$  in. long; girth of teeth at base,  $\frac{5}{8}$  in.; all taper to a point. All teeth rounded; interdental notches wide  $\frac{1}{8}$  to  $\frac{1}{4}$ ; teeth present transverse markings near apex; one of teeth evidently constricted as if a twine had often wound round it. The comb possesses the same curve as the tyne it has been made from. Among things found were—a copper needle, formed of wire, and an eye through it near one end; a quantity of deer's horns; a human thigh bone; thirty or forty vertebrae of whales flattened and marked, eight cut; a bone article, flat at each end and round in the middle, 8 or 9 in. long (lost); bone lid of a small box; six large black stone dishes, all about  $2\frac{1}{2}$  in. thick, and varying from 1 ft. 8 in. to 10 in. in diameter (Pl. XIII. fig. 4).

## COMB No. 11. HILLSWICK (No. 1).

Typical in form; 5 in. long; girth at dental end,  $3\frac{1}{2}$  in.; at tail end,  $3\frac{3}{8}$  in. Teeth, 10 in number; middle ones longest, have marks of wear near apex (Pl. XV. fig. 11).

## COMB No. 12. HILLSWICK (No. 2).

Typical in form, but ornamented;  $5\frac{1}{2}$  in. long; girth at tail end, 3 in.; at dental end,  $3\frac{5}{8}$  in. Teeth have been 14 in number, only 4 remain; length,  $\frac{9}{8}$  in., set close together with very narrow interdental notches. Evidences of the handle having been cut by an instrument like a knife are seen. On convex surface of handle are the ornamental lines depicted in Pl. XIV. fig. 2. Some of these series of lines commence with four, but two invariably run into one another, and only three lines are seen on coarse inspection. The rough flat side of handle has, within three lines of the bases of the teeth, a complete broad transverse mark, evidently made with a coarser instrument than the other lines. Between this and bases of teeth is found another coarse groove, only running about  $\frac{1}{2}$  in. through from the margin of the comb (Pl. XIV. fig. 2).

## COMB No. 13. HILLSWICK (No. 3).

Is made of bone. More flat, and possesses coarser teeth than rest of Hillswick combs, of which it is the third. Handle oblique as regards teeth; its distal end,

concave, is uneven, and not cut at right angles to axis of handle. Length,  $5\frac{1}{2}$  in.; girth at distal, 4 in.; at dental,  $4\frac{1}{2}$  in. Teeth, probably 13 in number; marks of 10 left, 2 only unbroken, these  $\frac{1}{2}$  in. long. Remnants of teeth show that they must have been set obliquely, and irregularly as regards handle, not parallel like the iron bars in a palisade railing, but some pointing in one direction, others in a slightly different, and not of uniform thickness. Cutting grooves well seen. This comb is remarkable from its appearance and a comparison with other combs; also bearing in mind it was found with three typical and well-finished combs, I am almost tempted to theorise concerning its production. In the first place, whether from necessity or voluntarily, an oblique splinter of bone seems to have been selected. The fabricator of the comb failed first in the parallelism of the teeth; second, in the parallelism observed between apices of teeth on the one hand, and margin of distal end on other. Then the margins of the handle are not equally hollowed out. Can it indicate the work of a beginner? or was it intended for one of the lower classes of that age? (Pl. XV. fig. 10).

#### COMB No. 14.

Fourth of Hillswick lot, also the largest. Typical in form, except distal end slightly thickened,  $6\frac{1}{4}$  in. long; girth at distal, 4. in.; at dental,  $4\frac{1}{4}$  in. Teeth, 16 in number (largest number yet found in any broch comb). They are  $\frac{7}{8}$  in. in length; only 4 are complete, and these exhibit easily seen transverse marks of wear near apex. Handle of comb has marks both of old and recent shavings. Near dental end on flat surface is a deeply cut groove. Sections of this comb were made and examined microscopically, and showed well the histological characters of bone, especially resembling that of whale (Pl. XIV. fig. 4. Dotted line at side of plate marked *a-b* indicates length of this comb).

#### STUART'S COMB, No. 15. Proceedings, vol. vi. pt. ii. p. 402.

Made of bone. Body, typical in form; both sides are slightly convex, one side especially smooth and polished; this surface also presents the appearance of having had very thin slices cut off it here and there, and then these cut surfaces polished. There are one or two other abrasions of this surface that are evidently of more recent production. Length of comb,  $\frac{3}{4}$  in. Teeth, 14 in number, short, thin, flattened from side to side, and well finished at their bases. Average length,  $\frac{1}{2}$  in., though some are much shorter; 5 entire ones only remain, 3 of which stand in series, and are of different sizes, so that the 8th tooth from one side (or 7th from the other) is shorter than 7th tooth on same side (6th on the other), so likewise the 7th is longer than 6th (or, if we count them from the other side, the 6th than the 5th). No cutting grooves are present, nor are there indications of them ever having been present and then effaced; but there are lots of transverse grooves of wear present in the teeth that remain, and the stumps of the broken ones; these are especially found on the outside of the only external tooth that remains, no traces of such grooves being seen on the opposite or internal lateral surface of such tooth, and as regards the remaining teeth and the stumps, they are not only worn more on one



side, but have these grooves of wear only on the same lateral surface as the outside tooth, very few grooves of wear being seen on the opposite lateral surface. These grooves are present in greatest number nearer the bases of the teeth than the apices, and are best marked on the margins, which are between the polished surface of the comb and the lateral surface; in other words, on the part of the teeth in which the compact harder bone tissue is found. This points to a view that I have regarding these combs when used, viz., that the compact or hardest part of the comb is that which has been opposed to the wool or flax (Plate XVIII. fig. 5).

#### PETRIE'S COMB, No. 16.

Body typical in form; distal end approaching fish tail form; one lobe broken away; surfaces flat. Margins of handle have appearances of having been sliced or shaved in manufacture of comb, especially so near dental end. Teeth broken away from stumps; it is evident they have been 8 in number, irregularly cut, of various thicknesses, and were cut chiefly from one surface of comb, from cutting grooves being found only on one side, and the characters of these grooves themselves. Two stumps, one belonging to an external tooth, and the other belonging to one of the central set, have transverse grooves not produced by wear; this is the only comb on which I have seen such cuts on the lateral surfaces of the teeth; they are much deeper, and possess all the characters of a cut, as distinctive from a groove of wear (Pl. XV. fig. 6).

#### COMB No. 17. D. BALFOUR, Esq.

Is made of bone. Is remnant of a very strong comb, 6 in. long. Handle has one of its margins, and some of the teeth, broken away. Seven long, clean, and very strong teeth remain. Interdental notches comparatively narrow, but clean. Teeth 2 in. long. Dental surface has a sharp, transverse line at very bases of teeth. Handle hacked and shaved, especially its remaining margin. Any one examining this comb would never for a moment doubt that its teeth had been cut by a saw (Pl. XV. fig. 5).

#### COMB No. 18. ROMAN CAMP COMB.

Found, along with an iron dart-head, in a "Roman Camp" at Hamhill, Somersetshire, by J. F. Irvine, Esq., F.S.A. Scot. (Proc., vol. vii. part ii. p. 424). Made of horn;  $6\frac{1}{2}$  in. long; girth at dental end,  $2\frac{3}{8}$  in.; round the body,  $2\frac{1}{4}$  in. Handle long and narrow; margins very round; ends by a knob at blunt end. Teeth, 10 in number, 4 perfect only,  $\frac{3}{8}$  inch in length, with sawing marks present. At base of teeth is a transverse line, which appears to have been the guiding line in cutting the lengths of the teeth (*vide* Pl. XIV. fig. 3).

#### COMB No. 19. ESKIMO COMB. Proc., vol. v., page 126.

From Repulse Bay, Hudson's Bay, lat.  $66^{\circ} 22'$ . Handle and teeth almost equal to one another in length; handle is almost square, margins or sides of square being concave. Both surfaces are smooth. Has 12 teeth. Each tooth, except the exter-



nal ones, is long, and slightly narrower at apex than at the base. Point is bevelled from surface to surface. Margins of teeth have been shaved off. Marginal teeth much thicker and stronger. Bases of teeth mostly without groove of cutting. Middle teeth longest, not because they project beyond the others at end, but because the line of the bases is concave. Teeth converge, hence more difficult to cut the comb. At end of handle bone is cut in form of a small ring, by means of which it may be hung. Diameter of hole,  $\frac{1}{4}$  in. Handle ornamented like panel of a door. Comb evidently a new one, and possessing no traces or marks of wear (*vide* Pl. XVI. fig 3).

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EXPLANATION OF PLATES.

*Plate XIII.*

- Fig. 1. Ervie Comb, No. 2 addenda. Typical.  
 Fig. 2. Peach's Fish-tail Comb, No. 4 addenda.  
 Fig. 3. Innes's Comb, No. 1 addenda.  
 Fig. 4. Gordon's Comb, No. 10 addenda. This comb is like the Kent's Cavern specimens, according to description in Brit. Association Reports.

*Plate XIV.*

- Fig. 1. Part of Hillswick Comb, No. 12 addenda. Smooth surface.  
 Fig. 2. Part of Hillswick Comb, No. 12. Rough surface.  
 Fig. 3. One form of so-called Roman Camp Combs, No. 18 addenda.  
 Fig. 4. Part of Hillswick Comb, No. 14 addenda.  
 Fig. 5. Part of Comb, No 9 addenda.

*Plate XV.*

- Figs. 1, 2, 3, and 4 refer to Farrer's Combs, No. 5, 6, 7, and 8 in addenda. Fig. 1 exhibits very well the cylindrical form of their handles.  
 Fig. 5. Balfour's Comb, No. 17 addenda.  
 Figs. 6 and 7. Petrie's Combs. Fig. 6, No. 16 addenda. Fig. 7 is from a sketch by Mr Petrie.  
 Fig. 8 is the Speltisbury (Dorset) Roman Comb in British Museum.  
 Fig. 9 is the Danebury (near Stockbridge, Hants) Comb in British Museum. Figs. 8 and 9 from rough sketches by Aug. W. Franks, Esq., British Museum.  
 Figs. 10 and 11. Hillswick Combs. Fig. 10, No. 13 addenda; fig. 11. No. 11 addenda.

*Plate XVI.*

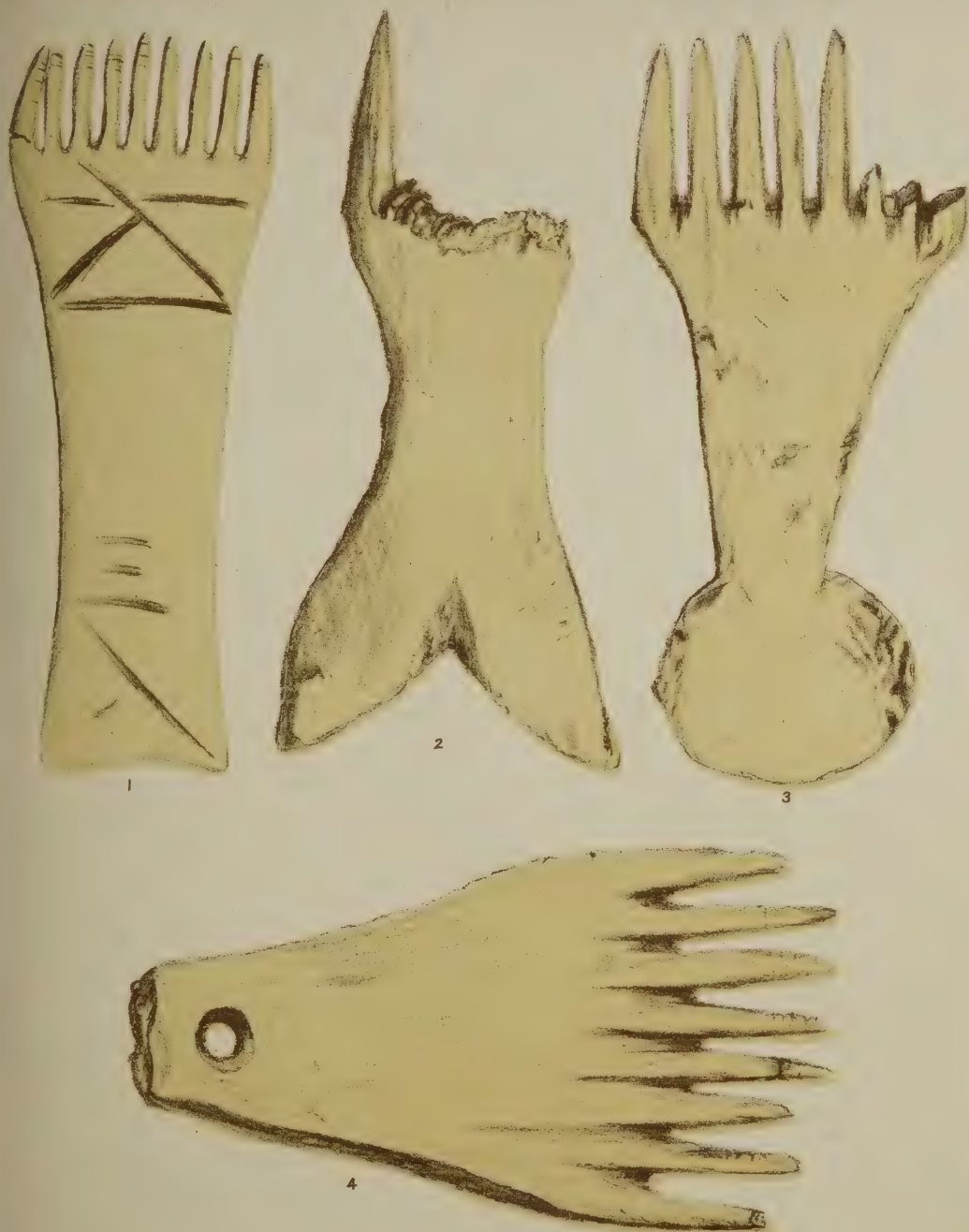
- Figs. 1 and 2. Carnliath Combs. From sketches by Rev. Mr Joass.  
 Fig. 3. Eskimo Comb, one variety. *Vide* addenda, Comb. 19.  
 Fig. 4. Is a Roman Camp form, in British Museum; where got unknown. From a sketch by Mr Franks.

## Plate XVII.

- Fig. 1. Bone Comb.  
 Figs. 2 and 3. Bronze, Worsaae. *Vide* p. 136 of my paper.  
 Fig. 4. One of Madsen's Combs. *Vide* pp. 125 and 137 of my paper.  
 Fig. 5. Yew Wood, Moosedorf.  
 Fig. 6. Bone, Nussdorf.  
 Fig. 9. Bronze Comb. } Keller's. *Vide* p. 136 of my paper.  
 Fig. 10. Cast of Bronze Comb.  
 Figs. 7 and 8. Bone, Keller's. *Vide* paper, p. 136.  
 Fig. 11. Schoolcraft's Indian Comb, made of wood. Schoolcraft, part iii. p. 468, pl. xxxv. fig. 2, from Oregon tribes of Columbia Valley. *Vide* also fig. 1. Hume ("Antiquities of Sea Coast of Cheshire") gives much interesting information concerning these combs, and figures several.  
 Fig. 12. Ickleton Comb., *Archæolog. Jour.*, vol. vi.  
 Fig. 13. Eskimo Comb, in possession of Society. *Vide* p. 135 of this paper.  
 Fig. 14. The other form of Eskimo Comb, p. 135.  
 Fig. 15. Stephens's Moss Comb. *Vide* p. 136.  
 Fig. 16. Profile view of one of its teeth.

## Plate XVIII.

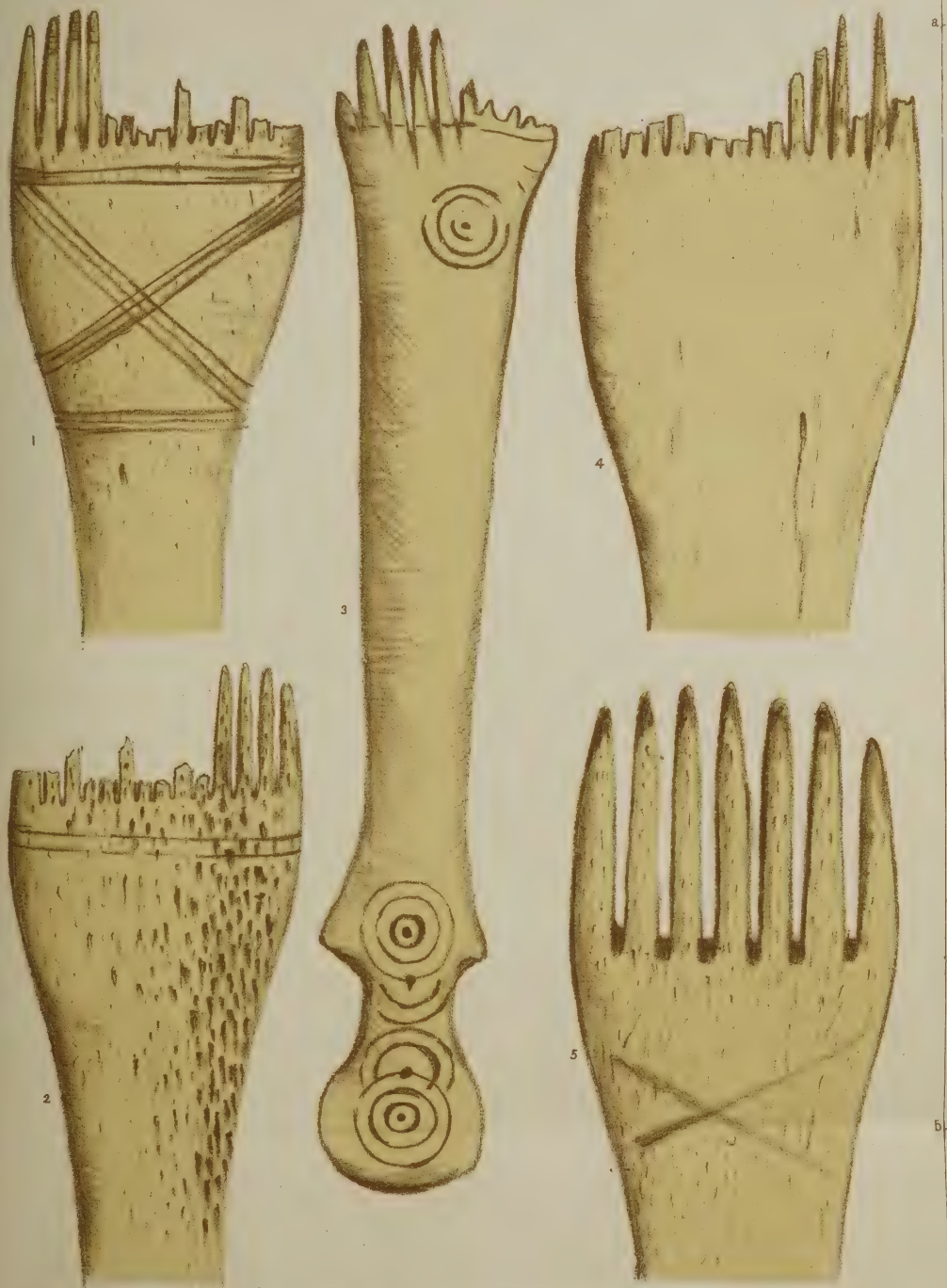
- Fig. 1. Diagram to show profile view of a section of well-finished comb.  
 a, Transverse grooves of wear.  
 Fig. 2. Diagram exhibiting a profile view of badly finished combs.  
 a, External surface of comb or tooth.  
 b, Internal surface of comb or tooth.  
 c, Lateral or opposing surface, exhibiting—  
 d, A small conical piece of bone at base of tooth, which is absent in well-cleaned and finished specimens.  
 e, Oblique saw marks on side of tooth.  
 f, Sawing grooves of bevelled part.  
 Fig. 3. Diagram of teeth of an unfinished comb, exhibiting, with clogged teeth—  
 a, Sawing grooves on bevelled part.  
 b, Marks of wear.  
 Fig. 4. Typical and well-finished teeth and interdental notches.  
 a, Marks of wear.  
 Fig. 5. Stuart's Comb, No. 15 addenda.  
 Fig. 6. Pompeian Bronze Comb. *Vide* fig. 12.  
 Fig. 7. Bowermadden Bow-handled Comb. *Vide* Mr Joseph Anderson's paper in "*Archæologia Scot.*," vol. v.  
 Fig. 8. From a photograph of "Fontana" (The Lightning), a Seshaaht squaw, a tribe on the western shores of Vancouver's Island. Exhibits the flattened forehead, and an Indian comb, as worn *in situ*.  
 Fig. 9. From photograph of Tabitha Propert, a North Greenland girl. Exhibits Eskimo mode of dressing the hair.



LONG-HANDLED COMBS.

(Actual size) .p. 149.





DRAWN ON STONE BY MILLEN COUGHER, M.B.

W. & A. K. Johnston Edinburgh.

LONG-HANDLED COMBS.

(Actual size) p. 140.







DRAWN ON STONE BY MILLES GOUGHREY, M. B.

W & A.P. Johnston, Edinburgh

LONG-HANDLED COMBS.  
(1 to 10 about  $\frac{1}{2}$  - 11 Actual Size) p 149





DRAWN ON STONE BY MILLEN COUGHTREY, M. B.

SWISS, DANISH AND ESKIMO COMBS (*p. 150*)

(Fig. 17 from Madsen)







COMBS, ETC.



Fig. 10. A portion of a comb found on the shores of Cheshire. *Vide* Hume's work.

Fig. 11. A Fijian Priest's Comb.

Fig. 12. A Bronze Pompeian Comb. *Ceci Piccoli Bronzi del Museo Borbonico. Tavola viii. figs. 49 and 50.* I would class them with single-margined Saxon combs.

## V.

### NOTE OF THE EXCAVATION OF SOME TUMULI AT MELVILLE MOOR.

By THE REV. JAS. BRODIE, MONIMAIL, FIFE, CORR. MEM. S.A. SCOT.

The following notes contain the results of the examination of some remains of antiquity which are found in Melville Moor, to the north of Ladybank, under the direction of Sir H. Dryden :—

Attention was in the first place directed to a circular trench, between 30 and 40 feet in diameter, which seems to have been originally about 4 feet deep. But nothing was found to indicate the purpose for which it had been made, or to show whether it was the remains of a hasty entrenchment, thrown up to protect a small body of warriors, or an enclosure for some purpose of peace.

Two closely adjoining tumuli, on the east side of the road above the railway bridge, were then examined. The one on the north is about 30 feet in diameter, and nearly 5 feet high. A trench having been cut through it, it was found to be formed of the soft sandy soil that covers the moor around, but had been covered on the top with a quantity of loose stones. A depression was found in the centre. A hollow seemed to have been formed in the original soil about 6 feet long,  $1\frac{1}{2}$  feet deep, and  $2\frac{1}{2}$  feet wide. At either end of this hollow was a stone, such as are found in the adjoining soil, somewhat flattened in form, and of a size that would require the united strength of two men to lift. These stones were not set on edge, but lay on their side in the hollow. The direction of this trench or hollow, being from west to east, suggested the idea of a grave; but there was no trace of any bone, nor of any instrument of metal or stone, and no sign of ashes or burnt wood, though some very dark-coloured earth was picked up. Some wood, very much decayed, was found; but nothing was discovered that could show whether it had

been placed there by the hand of man, or whether it was the remains of tree roots that had grown on the mound.

The mound to the south consists almost entirely of the soft sandy earth before described. It is rather more than 5 feet high at the centre, and is about 50 feet in diameter. About the middle of the mound the workmen employed in cutting the trench came upon some bones. These were very carefully exhumed. They were found to be parts of the skeleton of a man, apparently about 6 feet in height. Some of the larger bones, such as those of the thighs, were entire; but most of them were very much decayed. Almost all the smaller bones had completely wasted away. One side of the skull remained whole, showing that the head had been of full average size, and of good phrenological development. The other side was much decayed. The lower jaw was entire, with a full complement of healthy looking teeth, indicating a man in the prime of life. The body lay as in ordinary graves, from east to west, the head lying towards the west. No trace of wood or metal could be found, excepting a single iron nail,  $2\frac{1}{2}$  inches long, to which a small fragment of wood adhered. The fibre of the wood was parallel to the side of the nail; this induces the supposition that the nail had been driven into the end of a staff, and that the staff had been broken by some one who had been trying to dig into the mound. It seemed to have no connection with the interment of the body.

The skeleton we have been describing lay about a foot and a half above the natural level of the soil. It may therefore be regarded as a second interment in the place. The body having been buried at full length, and in the direction of ordinary graves, precludes the possibility of its having been that of a murdered man, hastily put away out of sight. The probability is that the remains are those of some unfortunate creature who committed suicide, to which the custom of former times forbade the ordinary rites of burial in consecrated ground.

The trench was carried through the mound down to the natural level of the soil, but no trace of bone, nor any remains of man or of man's art could be found. Another trench, at right angles to the first, was cut, but with the same result.

A third tumulus, rather more than a quarter of a mile to the north-west, was also explored. It is on the top of a little knoll. Like that

which we have last described, it is composed entirely of the soft sandy soil that covers the adjoining ground. At the centre it was about 5 feet high. No remains were found.

These tumuli suggest the idea of a bloody skirmish in times long gone by. The dead seem to have been gathered together, and a mound of turf torn up from the adjoining ground heaped over them. It is remarkable that not the slightest vestige could be seen of bone or weapon, ashes or charcoal.

The smaller mound, on which more care seems to have been bestowed, may be supposed to have been the resting-place of a fallen chief. But no evidence is left to show us what was the cause for which they fought, or what was the race to which they belonged.

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MONDAY, 13th March 1871.

ROBERT COX, Esq., W.S., in the Chair.

The following Gentlemen were balloted for, and admitted as Fellows:—

ALEXANDER R. SIMPSON, M.D., Professor of Midwifery, University of Edinburgh.

PETER GEDDES WALKER, younger of Ravensby, Esq., Dundee.

JOHN F. RODGER, Esq., 1 Royal Circus.

JOHN TAYLOR BROWN, Esq., Gibraltar House.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors:—

(1.) By ROBERT THOMAS, Esq. of Drumour and Noranside, through JAMES NEISH, of the Laws, Esq., F.S.A. Scot.

Two polished Celts of indurated claystone, one  $15\frac{1}{2}$  inches in length by  $3\frac{3}{4}$  inches wide at the broad end, and 2 inches at the other. Both ends are similarly brought to a thin edge; but the narrow end, instead of being sharpened like the other, has been ground blunt. The two long edges have been ground flat lengthways. The marks of the grinding and



polishing are still visible over the whole surface; it had been done in separate facets along the length of the instrument. This is the largest specimen of a Scottish celt on record, if we except one which was found at Watten, in Caithness, in 1840, and which is described in the *John O' Groat Journal* of the date, as "shaped like a tailor's lapboard," and measuring 17 inches long by 9 inches at the broadest end, and 4 inches at the narrow end. If the two latter measurements are intended for girth measurements, the Watten celt would be very much of the same form as this one, but an inch and a half longer. The Watten celt, however, does not appear to have been preserved, and the present specimen is the largest known to exist in Scotland.

The second celt is more elegantly formed, but smaller. It measures 13 inches in length, 3 inches across the broad end, and  $1\frac{3}{4}$  inch across the small end. It is ground and polished in the same way as the other one, but is distinguished by a slight expansion at the small end, which gives it a more elegant form. (See subsequent communication by James Neish, Esq.)

(2.) By JAMES NEISH, of the Laws, Esq., F.S.A. Scot.

Polished Stone Celt,  $3\frac{1}{2}$  inches in length, found in a cairn in Glenshee, Forfarshire.

(3.) By JAMES WALKER, of Ravensby, Esq., through JAMES NEISH, Esq., F.S.A. Scot.

Two conical masses of baked Red Clay, one measuring  $3\frac{1}{2}$  inches diameter across the base and  $4\frac{1}{2}$  inches high, the other  $3\frac{1}{4}$  inches across the base and  $3\frac{1}{2}$  inches high, found at Ravensby, parish of Barrie, Forfarshire. They are pierced near the top, and the holes are worn on the upper side as if by suspension. They are similar in form to the clay cones from Robenhausen and other Swiss lake dwellings, which have been termed "loom-weights" by continental archaeologists. Two masses of hardened clay, not so conical in form, but similarly pierced, and having the holes similarly worn, were found at Montblairy, in Banffshire, and are now in the Museum. They are described and figured in the Proceedings, vol. ii. p. 347, and vol. iii. p. 68, as "clay hammers." A "loom-weight" of dark coloured clay, precisely similar to the Ravensby "clay cones," but smaller, is in the Society's collection of objects from the lake dwellings of

Robenhausen, in Switzerland. (For a description of the circumstances in which these interesting objects were found, see subsequent communication by James Neish, Esq., p. 174.)

- (4.) By MRS SCRYMGEOUR FOTHERINGHAME, of Tealing, through JAMES NEISH, of the Laws, Esq., F.S.A. Scot.

Human Skull from a short cist at Tealing, Forfarshire. (Described Proc. vol. viii. p. 383.)

- (5.) By ROBERT FORREST, Esq., solicitor, Kirriemuir, through JAMES NEISH, of the Laws, Esq., F.S.A. Scot.

The Jongs, with their padlock and key, of the old Kirk of Clova, Forfarshire. These jongs consist of an iron collar, opening in the middle on a looped hinge at the back, and fastened in front by a large padlock, about 6 inches diameter.

- (6.) By MR PETER COLLIER, 12 Randolph Crescent.

The following articles, collected by Mr William Gillespie, Turriff, viz. :—

A Stone Hammer, barrel-shaped,  $3\frac{1}{4}$  inches long, and 3 inches in greatest diameter, perforated through half its thickness only by a circular hole  $\frac{7}{8}$ ths of an inch in diameter, found on the hill of Ashogall, Turriff, Aberdeenshire.

A rude triangular Stone Hammer, unsymmetrical, greatest length 3 inches, greatest breadth 2 inches, perforated nearly in the centre by a hole  $\frac{7}{8}$ ths of an inch wide at one side, and  $\frac{3}{4}$ ths of an inch wide at the other, found on the Gallow Hill of Turriff.

A Stone Whorl, ornamented with circles and lines of dots, found on the Gallow Hill of Turriff.

A leaf-shaped Arrow-Head of reddish flint (broken at the point), 2 inches long, found near Turriff.

Specimens of Flints, &c., from the clay of the district.

- (7.) By Major CHADWICK, Moy House, Forres.

One hundred Beads of yellowish glass, being half of a necklace found on the Culbin Sands, near Forres, and one small ribbed Bead (broken) of dark coloured glass, found at the same time, as previously described.

- (8.) By REV. W. L. COLVIN, D.D., minister of Cramond, through Sir  
WALTER ELLIOT, of Wolfelee, K.S.I., F.S.A. Scot.

Copper Ring, being a plain flat band,  $\frac{1}{4}$  inch wide and an inch in diameter, having an inscription in Runes on its exterior surface. Professor George Stephens,<sup>1</sup> of Copenhagen, author of the magnificent work on "The Runic Monuments of Scandinavia and England," has pronounced the characters inscribed on the ring to be Runes, but the photographs and impressions with which he has been furnished have not enabled him to extract any intelligible meaning from them. These inscriptions on rings, &c., are frequently cabalistic, and present no intelligible form of words.

- (9.) By Mr JAMES ROBB, gas-manager, Haddington.

A piece of Lead Piping, about 2 feet in length, and an inch in diameter, being part of an old pipe found in the High Street, Haddington, near the site of the monastery of the Dominican friars. It is not a tubularly formed pipe, like those of modern manufacture, but has been made by rolling a sheet round and "burning" its edges.

- (10.) By ANDREW SLATER, Esq., through Dr JOHN ALEXANDER  
SMITH, V.P.S.A. Scot.

A series of Oak Shingles, from the tower of the Canongate Tolbooth, fixed on a board as on the roof, and a bundle of separate shingles of various sizes from the same. (See subsequent communication by Dr John Alexander Smith, p. 162.)

- (11.) By the SMITHSONIAN INSTITUTION.

Annual Report of the Smithsonian Institution for 1868. 8vo.

Smithsonian Contributions to Knowledge. Vol. XVI. 4to.

Smithsonian Miscellaneous Collections. Vols. VIII. and IX. 8vo.

<sup>1</sup> An account of the inscription on the ring, by Professor Stephens, will be given in the next volume of the Proceedings.

(12.) By the AMERICAN PHILOSOPHICAL SOCIETY.

Proceedings of the Society. Vol. XI. 1869. No. 82.

(13.) By the ESSEX INSTITUTE, Salem.

Essex Institute Historical Collections. Second Series. Vol. I. Part 2. Salem, 1869.

Proceedings and Communications of the Essex Institute. Vol. VI. Part I. 1868.

Bulletin of the Essex Institute. Vol. I. Nos. 1 to 12.

An Account of the Newspapers and other Periodicals published in Salem, from 1756 to 1868.

The following Communications were read:—

# I.

NOTICE OF THE GALLOW HILL, AUCHTERLESS, AND OF CIRCULAR FOUNDATIONS AND TUMULI, AND VARIOUS RELICS DISCOVERED THERE. BY MR JAMES FORREST, SCHOOLMASTER, AUCHTERLESS, ABERDEENSHIRE.

The Gallow Hill lies about two miles to the north-west of the Kirk-town of Auchterless, and nearly four miles, as the crow flies, north of the Roman camp on the Ythan. A tracing of it, kindly sent me by Lieutenant Nixon, of the Ordnance Survey, accompanies this notice.

How the hill received its name I do not pretend to say. The country people affirm that on it, in old times, criminals were executed; but it is questionable if they have any other ground for this beyond the suggestiveness of the name. There is a moat hill in the parish, just beside the parish church, but the distance between this and the Gallow Hill affords strong presumption against their connection with one another; and further, there is another hill, about a fifth of a mile from the moat, which tradition mentions as the place of execution.

Did it receive its name from the "stone circles?" There is one upon it, and another quite close to it, which bears to this day an ugly reputation. It is said that any one who dares to take away a stone from it will be haunted, and have no peace nor luck until he restores it to its place. The grandfather of the late laird of Hatton took away two of the standing stones to form pillars for a gate, but tradition goes that so many accidents occurred in consequence of this sacrilege, that he was obliged to take the stones back again, and they now lie beside their neighbours, with the iron staples still fixed in them. But it may be very safely concluded that their unshapeliness had as much to do with their being returned as their reputed power of bringing ill-luck.

The Gallow Hill long bore the character of a haunted place, especially on its southern side, where it slopes into the howe of the Auld Yoch (Alt Heugh?) Many a time, it is said, has some belated wight had to encounter the ghosts of murdered men whose bones lay bleaching on the hillside; and often, too, has the passer-by heard the wailing of some infant crying "Nameless," "Nameless." But these superstitious fears, and even the traditions themselves, are fast disappearing. So much has the encroachment of human habitations upon, and the cultivation of, the hill destroyed all the ancient regard for it, that it would soon have been covered with cultivated fields, and all its antiquities would have passed away unnoticed, had it not been for the casual remark of a farmer who rents a portion of it. About a year ago, he remarked in the course of conversation, that he had found several urns and "bone heaps" while engaged in trenching his land on the hill. He also remarked that there were a number of curious circles along the face of the hill, and that he had found great numbers of "darts" made of flint.

In consequence of his remarks I visited the hill several times alone, and once along with the Rev. Messrs Sutherland, of Tillymorgan, and Brebner, of Ythan Wells. We made several excavations, and came upon an urn containing bones and bone-earth. Having taken specimens of these to Colonel Forbes-Leslie, he advised me to write to the Society of Antiquaries, and give an account of the various things that had been found.

I now subjoin, in detail, a description of the antiquities discovered.

*Circular Houses.*—More than thirty circular houses are said to have been



once discernible on the hill, on its east, south, and west sides; but now, owing to the extension of cultivation, not more than twelve can be accurately traced, and only six of these remain almost untouched. They consist of a rim of earth, averaging 6 feet in breadth, and a hollow cavity in the centre, and measure, from the middle of the rim, on an average 30 feet in diameter, much larger, apparently, than the generality of such houses. In one that was partially examined there was found a hole very nearly in the centre, measuring about 1 foot in diameter, and  $2\frac{1}{2}$  feet in depth, in which nothing was discovered but some decayed wood, which seemed to be the remains of a large pole that had been driven about two feet into the hole, and was possibly intended to support the other poles that formed the roof of the wigwam. At the north-east and south-west points of the house remains of fires were discernible by quantities of ashes and charred wood, apparently oak (?), birch, and hazel. In each of the circles a depression, corresponding to a door, can be very distinctly traced, and all these doors invariably point to the rising sun.

*Tumuli.*—The remains of nine tumuli are still discernible, but only two small ones are now in a state of preservation. The others have been turned up without examination during the last few years in the reclamation of the waste land. All we know of them is that they contained urns and bones, which the cultivators seem to have considered not worth the trouble of preserving.

These tumuli are composed of slaty stones (the district being of the clay-slate formation) and water-worn pebbles. The slate-stones were carefully laid on edge, in courses apparently round the urns, and sloping towards them. This appeared, at least in the case of two of the tumuli that were partially examined; for on following the slope of the stones we came upon an urn in each. The pebbles appear to have been cast on merely to increase the size of the heap. All the cairns were covered with mossy earth to the depth of an inch or two.

Of these tumuli five large ones were situated about thirty yards apart from one another, almost in a straight line east and west at the commencement of the Auld Yoch Howe. Above these, in about the space of three acres of land, was found the greatest number of arrow-heads imbedded an inch or two below the surface of the soil. Great numbers are said to have been found by persons engaged in "casting divots" to cover the roofs of

their houses, as well as potato pits, &c. May we not infer from this that a battle was one day fought on the spot between two hostile tribes? or are we to suppose that these numerous arrow-heads afford evidence of funeral games in honour of the dead?

The sizes of the tumuli vary, some being 24 feet in diameter, and others only 12 feet. By far the largest were those five already mentioned. In what *appears* only to have been a tumulus a hole was found, about 2 feet in diameter and 4 feet in depth, carefully lined on sides and bottom with clay. This tumulus had been interfered with, apparently a good while ago; and if anything had been in the hole it had then been removed. The question suggests itself, Was this a tumulus or a dwelling-house? Certainly an urn was found in the cairn raised on it, but may it not have been used as a house first, with its store-hole for weapons, &c., and afterwards had the cairn with the urns raised over it?

Each tumulus appears to have contained several urns containing bones and bone-earth. From the whitened and shrunken appearance of the bones we may infer that they were calcined. The bone-earth, again, is composed of small fragments of these bones imbedded in the moss, which has split and completely filled up the urns. Unfortunately, all the urns have thus given way in the taking out; but the portions of three nearly complete, with a quantity of the calcined bones and bone-earth, have been preserved, and are now at Knockleith House (Major Duff's), while the fragments of a fourth lately was preserved at Hatton Castle; but whether it is there still I do not know.

Of the best preserved two at Knockleith, the one measures 26 inches round the middle, and the other 20 inches, both being about 7 inches high, and resembling in shape a common earthenware jar, with an edging of crossed lines round the top.

These urns were formed of red clay, once to be found in the neighbourhood, and seem to have been formed with the hand and baked in the fire. For rests and covers rough slate-stones were used, rounded in shape, the covers being smaller and thinner than those on which the urns rested.

*Relics.*—These are not many in number, nor of much importance. So far as has yet been discovered, they consist of arrow-heads, stone whorls, celts, sling-stones, and plate-stones.

The arrow-heads were once found, as has been previously stated, in

great abundance, spread over a few acres to the north of the five tumuli before referred to, and more sparingly along the brow of the hill in the immediate neighbourhood of the circular houses. A great many have been lost or ignorantly destroyed by the finders, who commonly used them as flints "to strike fire" with. The usual forms are the triangular with barbs and stems, without barbs, serrated, and leaf-shaped.

The stone whorls are made of clay-slate. Only two have as yet been met with, and one of these is lost. The remaining one was found lately in trenching out one of the circular houses, and measures 4 inches in diameter. It is rather rough-looking, but apparently has seen a good deal of service. [This seems not to be a whorl, but one of the larger pierced stones, the use of which has not been well determined.]

Two celts have been found, the larger of gritty stone, measuring  $7\frac{1}{2}$  inches in length and  $4\frac{1}{2}$  inches in breadth; while the smaller is of a darker colour and closer grain, and measures about  $4\frac{1}{2}$  inches in length and  $1\frac{1}{2}$  inch in breadth.

A small round stone, resembling in shape and size a partridge's egg, is supposed to have been a sling-stone. If not, it may probably have been one of those used for the purpose of heating water. Another, somewhat larger, but similar in shape, had some marks upon it, which, if we can depend on the description of them given by the finder, seem to have resembled Greek characters. It has most unfortunately been lost.

Several circular slaty stones, more carefully dressed and polished than those used for rests and covers to the urns, have been found in the circular houses. One, at least, from its size, shape, and polish, would lead to the inference that it had been used as a stone-plate.

These are the leading facts I have been able to gather about the antiquities on the Gallow Hill of Auchterless, and I shall only be too happy to make a more vigorous search, as soon as the season permits, for more information about this once large and important settlement.

## II.

NOTICE OF THE SHINGLED ROOF OF THE TOWER OF THE CANONGATE TOLBOOTH, EDINBURGH. By JOHN ALEXANDER SMITH, M.D. V.P.S.A. Scot.

Some years ago, when walking with a friend down the Canongate, on a bright sunny day, I made a discovery which rather astonished me; the sun was shining brightly, as we passed, on the picturesque roofs of the turrets and tower of the Old Tolbooth, and from its rich brown colour and general appearance, I saw that it was not covered with slates, but with wooden shingles; and my friend, who was familiar with shingled roofed church towers in Berkshire, agreed with me in this opinion. The fact was a new one to me, though it may have been known to others, and must have been well known at least to the workmen who from time to time would require to repair the roof. I looked into the various published works which gave details of the antiquities of the city of Edinburgh, and of the adjoining burgh of the Canongate; but though some gave short, and others longer accounts of the Tolbooth, none that I could discover made the slightest reference to the fact of its shingled roof.

In the course of this winter, I happened to notice various planks and scaffolding projecting around the eaves of the old building, and on making lately a closer inspection, I found that it had apparently been undergoing a thorough repair; but I was startled to find the shingled roof had altogether disappeared, and that it was now newly covered with small blue slates. I learned, on making inquiry, the repair was a very necessary one, and that the work had been done under the superintendence of Mr Andrew Slater; and I soon discovered that he had in his possession a number of the old oak shingles. At my request he sought out various good specimens of the original, or at least the oldest shingles, which are all of oak, and fixed them in order on a board, sending me also several separate ones; these I have now much pleasure in presenting, in Mr Slater's name, to the Museum. The shingles measure about one foot in length, by three to five inches in breadth, and scarcely half an inch in thickness; and the ribbed and furrowed appearance of the exposed or lower extremity of each, shows the long period of time during



which they have borne the varying weather of our northern climate. This picturesque turreted roof is the only one in Edinburgh or the neighbourhood that has been covered with shingles, at least in our day.

I need not remind you, that in early times all the buildings in our country were made of wood; the larger buildings or churches, it is supposed, of cut timber, probably on foundations of stone, and roofed with reeds or wood; the smaller buildings of branches or wattles and mud, and roofed with reeds, rushes, &c. The same custom prevailed among the Scots, Britons, and Saxons,—the newer mode of building with squared stones after the Roman fashion, as it was designated, coming into occasional use for churches, in some instances, as early as the seventh century, at least in England. Dr John Stuart has entered fully into this subject, in a chapter on the “*Opus Scoticum*,”—the Scots Style—the Wooden Buildings—in his important preface to the “*Book of Deer*,” at page cliii. of this preface, where, referring to the use of wooden materials for buildings, as common also among the Saxons, he makes a quotation of much interest, telling us that “in King Edgar’s charter to the Abbey of Malmesbury, dated A.D. 974, he describes the state of the monasteries in his kingdom,—“*quæ velut muscivis scindulis cariosisque tabulis tigno tenuis visibiliter diruta.*” (*Gesta Regum Anglorum*, lib. ii., § 153; vol. ii., p. 247. (Eng. Hist. Soc.) This passage may be translated—these monasteries—“which, as it were, are visibly in ruins up to the very rafters or roof, with its moss-covered shingles and rotten boards.” Here, then, we have an early date, A.D. 974, when wooden shingles were undoubtedly used, though, where wood was abundant, they probably were in use from a much earlier period; and they have continued to exist in different parts of the country until our own day, as in this instance of our Canongate Tolbooth. I am not aware to what extent shingles still remain on the towers or roofs of the older buildings in Scotland, but they are still to be found in abundance on the roofs of various church towers and spires in the southern counties of England. In France and Germany, &c., we see old buildings, churches, houses, &c., still covered with shingled roofs; and in the northern countries of Europe, where suitable wood was abundant, shingles have been also used for a very lengthened period of time, many of the wooden churches of Norway, with their shingled roofs, dating from a very early period. In later times, the fashion has crossed



the Atlantic Ocean,—and America, with its abundant forests, is now the country where in all probability shingles are most extensively used.

In many fabric rolls and bills for building in old times, you constantly find the cost of *Scindulæ* shingles, and of shingle nails for attaching them. In the recent Imperial Dictionary of John Ogilvie, LL.D., we find the word “Shingle” thus explained. “[German, Schindel; Greek, σχινδαλμος; Latin, Scindula, from Scindo to Divide; Gothic, Scheiden.] A wooden tile: shingles are small pieces of thin wood, used like slates for covering a roof or building. They are from 8 to 12 inches long, and about 4 inches broad, thicker on one edge than the other.” In our first English Latin Dictionary, the PROMPTORIUM PARVULORUM, A.D. 1440, occurs the word “Schyngyl,” and “Chyngyl or Chyngle; bordys for helyngys of howsys—*Scindula*.” The word is sometimes written “shindles” (Holland’s Pliny, b. xvi., c. 10.) Piers Ploughman terms Noah’s ark a “shynglede shup.” They were used, as I have shown, in Anglo-Saxon times, and have never since been wholly laid aside, being more easily obtained, where wood was plentiful, than tiles or slates, and also lighter, which would cause an advantage in the cost of the timber framing. It is not easy, however, to make them water-tight, and hence they answer best on any vertical surface, or the steep incline of a spire, where they throw off the rain effectually. I am indebted for these last notes from the Promptorium and Piers Ploughman, &c., to the abounding knowledge of Mr Albert Way, A.M., F.S.A., and Hon. Mem. S.A. Scot.

To return, however, to our Canongate Tolbooth, I may quote the detailed description of this picturesque building, given in the interesting work, “The Memorials of Edinburgh in the Olden Time, by Dr Daniel Wilson,” vol. ii., 1848, p. 72; and I am able, through the politeness of the publishers of the work, Messrs Hugh Paton & Sons, also to add the woodcut referred to in the opening paragraph.

“The Canongate Tolbooth—(a view of which is annexed)—has long been a favourite subject for the artist’s pencil, as one of the most picturesque edifices of the Old Town. It forms the court-house and jail of the burgh; it was erected in the reign of James VI., soon after the abolition of religious houses had left this ancient dependency of the Abbey free to govern itself. Even then, however, Adam Bothwell, the Protestant commendator of Holyrood, retained some portion of the ancient


rights of his mitred predecessors over the burgh. The present structure is the successor of a much earlier building, probably on the same site. The date on the tower is 1591 ; and preparations for its erection appear in the Burgh Register seven years before this, where it is enacted, that no remission of fees shall be granted to any one, 'unto the tyme the Tolbuith of this burch be edefeit and biggit.' (Canongate Burgh Register, 13th October 1584 ; *ibid.*, p. 353.) Nevertheless, we find by the Burgh Registers for 1561, '*Curia capitalis burgi vici canonicorum Monasterii Sancte Crucis prope Edinburgh ; tenta in pretorio ejusdem,*' and frequent references occur to the *Tolbuith*, both as a court-house and prison, in the Registers and in the Treasurer's accounts, *e.g.* 1574, 'To sax pynouris att the bailleis command for taking down of the lintall stane of the auld tolbuith windo, iijs. vjd.' The very next entry is a fee 'to ane new pyper,' an official of the burgh, of whom various notices are found at this very early period.

"The *Hotel de Ville* of this ancient burgh is surmounted by a tower and spire, flanked by two turrets in front, from between which



The Canongate Tolbooth, Edinburgh.

a clock of large dimensions projects into the street. This formerly rested on curiously carved oaken beams, which appear in Storer's Views, published in 1818, but they have since been replaced by plain cast-iron supports. The building is otherwise adorned with a variety of mottoes and sculptured devices, in the style that prevailed at the date of its erection. Between the windows of the first and second floor of the tower, an ornamental sun-dial appears, and underneath the lower window a carved tablet bears the following inscription :—

 S. L. B.

PATRIÆ ET POSTERIS, 1591.

“There are two bells in the tower, the oldest of which has this favourite motto, with the date cast on it, SOLI DEO HONOR ET GLORIA, 1608. The larger bell, as appears from its inscription, was cast in 1796. Over the inner door-way, which leads both to the court-house and the prison, are these appropriate words, ESTO FIDUS ; and on the most conspicuous part of the edifice, between the windows of the council hall, a highly ornamental panel, surmounted by a pediment, adorned with a large thistle, bears the following legend :—J. R. 6. JUSTICIA ET PIETAS VALIDE SUNT PRINCIPIS ARCES. Within the panel the burgh arms are emblazoned, viz., a stag's head with a cross between the tynes, in commemoration of the monastic legend, to which the origin of St David's Abbey and its burgh is referred ; and underneath, the motto SIC ITUR AD ASTRA ; an un-failing subject of mirth to the profane wits of the capital, as an avowal by the old vassals of the church, that they now seek the way to heaven through the burgh jail.

“The independence of the burgh of Canongate was of brief duration, the magistrates of Edinburgh having purchased the superiority of it from the Earl of Roxburgh, and procured a charter of confirmation from Charles I., in 1636.”

The Canongate ceased to be a separate burgh in 1856, and the use of the Tolbooth for a court-house and jail has now also come to an end. The only inscription which seems to require explanation, Dr Wilson does not explain ; it is that just referred to on the front of the tower, with a hand pointing it out, and consists of the three initials, S. L. B., followed by the words PATRIÆ ET POSTERIS, and the date 1591. I have

not seen any attempted explanation of these initials. A local authority suggested to me, that in his opinion, and for want of better information, these initial letters must mean *Secure Lodging and Board*; and he doubts not that many of the former inmates of the jail have felt to the full what it all implied. The only reading that occurs to me, though perhaps as far from the truth as the other, is, *SENATUS LOCUS BURGHI, PATRIE ET POSTERIS*, 1591—The Senate House (or Court-House) of the Burgh, dedicated to the Country, and to Posterity, 1591.

### III.

NOTICES FROM ORIGINAL DOCUMENTS RELATING TO JOHN ANYSLEY, CONSTABLE OF NORHAM CASTLE, PRISONER IN SCOTLAND IN 1514, AND OF HIS MURDER ON HIS JOURNEY TO ENGLAND IN THAT YEAR. BY EDWARD PEACOCK OF BOTTESFORD MANOR, NEAR BRIGG, LINCOLNSHIRE, ESQ., F.S.A.

The following document, although I cannot claim for it the merit of illustrating the national history of Scotland or England, at the eventful period of the battle of Flodden, is of considerable interest, from its connection with that memorable contest. It is also not without importance, from the light it throws on the lawless state of society, which existed on the borders.

Norham Castle was taken by the Scots, on one of the latter days of August 1513,<sup>1</sup> but a very few days before the battle of Flodden. On the 4th of September, the Earl of Surrey issued from Alnwick his well-known challenge to King James. Among the affronts to the majesty of England set forth therein, the chief one is that the Scottish sovereign "had caste and betten downe the castel of Norhame, and crewella had murdered and slayne many of the kynges liege people."<sup>2</sup>

Of John Anysley's life little is known, or at least has been recoverable by me. We may, I think, assume without much fear of error, though there is, as far as I have seen, no proof of it, that he was a Northumbrian gentleman, of the same stock as the Aynsleys of Shaftoe and Little Harle Tower. The Durham records quoted by Mr Raine shew that he was

<sup>1</sup> The late Mr Raine states that it fell on the 29th. *North Durham* vi.

<sup>2</sup> *Battle of Flodden*, from a MS. in the possession of David Laing, Esq., LL.D., V.P.S.A. Scott.



constable of Norham in 1509-10, and that he received during that year the large sum of £153 for repairs. His original account book for 1510 was in the auditor's office at Durham when Mr Raine wrote his history;<sup>1</sup> a John Aynesley, no doubt the same person, was in the commission of the peace for Northumberland in 1512.<sup>2</sup>

One solitary despatch to his master, the Bishop of Durham, has been preserved, by having the good fortune to find its way into the hands of Sir Robert Cotton. It now forms a portion of the volume marked Caligula, b. vi., in the library of the British Museum. As it has been given very fully in abstract by Mr Brewer,<sup>3</sup> it is not needful to reprint it. The details are such as one would expect the commandant of a great border fortress to communicate to his superior in those disturbed times. The date of the document is 11th September 1512. The writer thinks the height of the war is over for this year, but advises that precaution should be taken against Scotland for the next. He goes on to inform the bishop, that his buildings at Norham go well forward. The west gate is completed, with two floors and a roof, "and atorngrece,<sup>4</sup> with ninety-two nowelles,"<sup>5</sup> and concludes by requesting him to send by the next ship a barrel of saltpetre, "for making of fire balls, and mending houre powder." The letter is signed John Anislow. After this, we meet with his name no more until after the fall of the fortress he commanded. The Scottish Chamberlain roll for 1514 furnishes us with the information that he was a captive in Scotland for thirteen weeks.

"Compotum Reverendissimi in Christo patris Jacobi Archiepiscopi

<sup>1</sup> *North Durham*, 290.

<sup>2</sup> Brewer's *Cal. Stat. Pap.*, vol. i. p. 445. *Rot. Pat.* 4 Henry VIII., part i. m. 6.

<sup>3</sup> Vol. i. p. 414.

<sup>4</sup> A winding stair. Gryse is an old word for a step, perhaps not yet obsolete.

"Greece or tredylor steyre *Gradus*." *Prompt. Parv.* i., 209.

"The lady . . . glydes down the grece and gos to the kyng."

*Early Eng. Allit. Poems.* E. E. Text Soc., 85.

"The steers or gryses coming vpp to the altare." [1566.] Peacock's *Ch. Furniture*, 81.

<sup>5</sup> The Newel, Noel or Nowell (Fr. *Noyau de Montée* or *d'Escalier*), is properly the column round which the steps of the stairs wind, but as a section of the column is almost always formed by the end of each step, the steps themselves were usually called newels, and the stairs are to this day usually spoken of by workmen as newel stairs.



Glasguensis camararii de Fiff redditum apud Edinburgh secundo die mensis Augusti anno Domini millesimo quingentesimo decimo quarto.

Expense . . . . .

Et allocatur compotanti pro expensis quondam Johannis Hainsly capitanii de Norhame et Edwardi Gray capitanei de Chillinghame presunariorum in quadraginta marcis remanendo cum dicto computante in Falkland ad spacium tresdecim septimanarum tempore quo dicta castra et fortalicia erant expugnata et deiecta ad terram per quondam dictum regem Jacobum quartum pie memorie prout constat auditoribus super compotum xxvj<sup>te</sup> xiiij<sup>s</sup> iiij.<sup>1</sup>

No other record of John Anysley's murder is known than what follows. The object the murderers had in view must ever remain a mystery. We may surmise, however, without any violent improbability, that it was an act of revenge committed by Englishmen on Scottish soil, as a retaliation for some injury or affront to one of the numerous cadets of the powerful house of Grey. No family was more widely spread, and few have had so great and long continued influence. Possibly there may have been some quarrel between the murdered man and Edward Grey,<sup>2</sup> the captive governor of Chillingham. His murderers, if at all related to Sir Edward Grey, were but very distant cousins; the Sir Roger Grey of the text is undoubtedly Sir Roger Grey of Horton, Knight, who married a sister<sup>3</sup> of Thomas Lord Darcy, K.G., who was beheaded in 1538. This Sir Roger had a brother Lionel, who was sometime porter of Berwick. The two families became united towards the end of the sixteenth century, by the marriage of Sir Ralph Grey of Chillingham with Isabel, daughter and co-heiress of Sir Thomas Grey of Horton, son and heir of the Sir Roger mentioned in the text.<sup>4</sup> It would be interesting to ascertain whether the Chillingham and Horton Greys were kinsmen, or but namesakes; my firm conviction is, that future research will prove them to have been of

<sup>1</sup> Chamberlain Roll 349, m. 4, in H.M. Register House, Edinburgh.

<sup>2</sup> Sir Edward Grey, Knt., of Warke, Chillingham, and Heton. He was still an Esquire only in 1529, when he was outlawed at the suit of Nicholas Horsley, of Ulchester. *North Durham*, 328.

<sup>3</sup> Her name is given variously, Jane or Isabel.

<sup>4</sup> See ped. in Raine's *North Durham*.

one blood ; the heraldic evidence, such as it is, goes however the other way. Grey of Chillingham bore *Gules a lion rampant within a border engrailed argent*. Grey of Horton, *barry of six argent and azure, on a bend gules a bezant*.

Clement and Cuthbert Muschiaunce, *i.e.* Muscamp, do not occur in the printed pedigree ;<sup>1</sup> there cannot be much doubt, however, that they were sprung from that Robert de Muscamp (*de musco campo*), on whom Henry I. conferred the barony of Wooler. The direct line of the baronial house ended in daughters *circa* 1249, but members of the family occur in the succeeding reigns, till that of Henry VIII., when we find Edward Muschampe of Barmoor,<sup>2</sup> son of George, son of John of the same, marrying a daughter of Sir Roger Grey of Horton. The printed pedigree is very imperfect ; although Clement and Cuthbert Muscamp do not appear therein, it is highly probable that they were near relations of Sir Roger Grey's son-in-law.

Nothing can be more positive than the statements we have, that the castle of Norham was utterly destroyed, "caste and betten downe," says Lord Surrey, speaking perhaps on vague rumours. "Expugnata et deiecta ad terram," says the Archbishop of Glasgow, who must have known the truth well enough. Such strong contemporary evidence would be received by the most sceptical on any matter where there was not absolute proof to the contrary. No one, however, who knows the existing remains, either from personal inspection or accurate representations, can doubt that the massive tower, which still mirrors itself in the Tweed, is at least as old as the time of Bishop Pudsey. The original fortress was built by Ralph Flambard, bishop of Durham in 1121 ;<sup>3</sup> and it was the opinion of the elder Raine, that some portions of Flambard's work were embodied in the present keep.<sup>4</sup>

<sup>1</sup> *North Durham*, 266.

<sup>2</sup> He had an annuity of xx. marks from the king, for services done in the borders. Let us hope one of them was inflicting punishment on his kinsmen. The arms of the family were a pun on the name. Their earliest seal is a circle, charged with seven flies. The visitation of 1615 gives *Azure three butterflies argent*. But other coats have been used by the family, *e.g.*, Robert de Muschans, 1250. *Barry of six*. . . . and . . . a chief. . . . The bearing *argent, a chevron between three crosses formee sable*, has been attributed to the Muschamps of Barmoor.

<sup>3</sup> *Sym. Durh.* sub. anno.

<sup>4</sup> *The Priory of Hexham* (Surtees Soc.), p. 84, n.

As the decree books of the court of Star Chamber for the reign of Henry VIII. are not to be found, it is impossible to tell what was the result of Elyanor Anysley's "lamentable and petuous" complaint. From what we know of the power and position of the Greys, it is to be feared that the chief actors in the tragedy did not receive the reward they seem to have merited.

My most grateful acknowledgments are due to Thomas Dickson, Esq., curator of the historical department, General Register House, Edinburgh, not only for furnishing me with the extract given above from the Chamberlain's Roll of Scotland, but also for having made long and minute searches among many other records in his custody, in the hope of finding something that might illustrate Anysley's untimely fate.

*Star Chamber Proceedings.—Henry VIII. Vol. I., AB-AP., fol. 181.*

"To the kyng our Sou'eyn lord.

"In her most lamentable & petuous wise shewith and Compleyneth vnto yo<sup>r</sup> moste excellent highnes yo<sup>r</sup> pore & dayly oratrix & bedewoman Elyanor Anysley wydowe late wife to John Anysley Esquier that were (sic) the seid John Anysley beyng Capetayn of Northm lying & adionyng apon the border of Scotland in Northumb'land whiche castell in the v<sup>th</sup> yere of yo<sup>r</sup> moste Royall Reign with a mightie & puissunte armye of Scottes thether brought by James the Scottishe kyng then yo<sup>r</sup> great Ennemye was beseged and for lakk of ordennce artilarie & other prouision of warr necessarie for defens of the same not hadd & pvided within the seid Castell and the seid armye made contynual assautes thereto boith day & nyght vnto the tyme the seid Castell was wonne & takyn by greatt force & violence where the seid Anysley did not onely lees all his goodes catalles & substūce but also was takyn p<sup>r</sup>isoner by the seid Scottes & caryed into Scotland where he did remayn vnto such tyme that yo<sup>r</sup> said oratrix with the ayd helpe & supportcon of her frendes dyd redeme the said John Anysley by certein fynnes & raunsome to the right great & Importunate charge & costes of her self and her frendes and so it is most drad sou'eign lord that the xxviiij day of Novembire in the seid v<sup>th</sup> yere as the seid John Anysley was comyng homewardes into this yo<sup>r</sup> Realme of England one S Roger Grey knyght & lyonell Grey brother vnto

the seid S Rog<sup>r</sup> of ther ppenced malice onely to murder the said John withoute any cause of his parte to them gyven the seid S Rog<sup>r</sup> & lyonell to accomlishe ther vngracious acte Ryotusly assembled vnto them one Clement Muschiaunce Cudbart Muschunce Ector Grey Rouland Beall Willm Beall & Willm Howbour with other Scottishemen in ther Companies with whome the seid S Rog<sup>r</sup> & lyonell were then allyed & confederate to gither the seid day & yere whiche was in the tyme of warr contrarie to yo<sup>r</sup> peace lawys crown & dignitie sou<sup>r</sup>eign lord with force & armes in man<sup>r</sup> of warr arrayed that is to say with Jakks splentes & sallettes swerdes buklers speres and other man<sup>r</sup> of weypons did lye in awayte in two seu<sup>r</sup>all places within the Realme of Scotland ther to do & comytt the seid abomynable murder the seid S Rog<sup>r</sup> & Cudbert muschunce with dyus Scottishmen layin secrete man<sup>r</sup> in one place & the seid lyonell Grey Clement muschunce Ector Grey Rouland Beall William Beall & William Howburn with other certeyn Scottes lay in a bushmet in an other place and the seid John Anysley the day & yere aboue seid intending to haue comen home into this Realme accompayned with one murrey his sunte attendyng apou hym beyng in Godes peace & yo<sup>r</sup> having neither weypon ne other thyng. . . . . re aboute them not feryng of any bodely hurte by any of yo<sup>r</sup> subiectes ffurthwrth moste gracious sou<sup>r</sup>eign lorde the seid lyonell Grey Clement muschunce Ector Grey Rouland Beall Willm Beall & Willm howburn whiche dyd lye in awayte as is aboueseid to murder the seid John Sodonly issued oute before the seid John with . . . . . drawyn in ther handes and ther they in moste furyous man<sup>r</sup> came rennyng apou the seid John & Henry murrey which John & henry when they sawe the seid Ryotous & ewyll disposed psones come apou them so rygorously & cruelly ffell down apou ther knees petuously holdyng vpp ther handes and crying for m<sup>r</sup>cie and requiryng the seid lyonell with the abouenaymed ewyll disposed psones in the hono<sup>r</sup> & reu<sup>r</sup>ence of almygh[t]y God to haue petie apou theym & to saue ther lyves whereunto the seid lyonell with the seid ewyll disposed & cruell murderers toke no regarde but then & ther neither feryng the punyshment of God ne of yo<sup>r</sup> lawys the seid John & Henry ther knelyng apou ther knees they cruelly felonously & tyrannously dyd kyll & murdre the seid John Anysley & Henry murrey aft<sup>r</sup> whiche murder so cruelly & hanously done & comytted the seid murderers to the intent that the seid haynouse



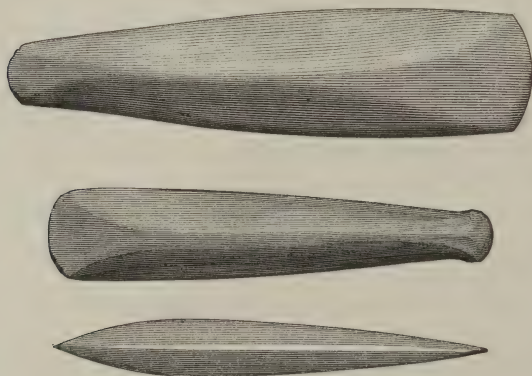
& shamefull murder shuld not be knowyn the seid murderers cruelly & maliciously did al so hew cutt & mangle the vesages & faces of the seid John & Henry in suche wise that ther was not left the space of iij fyng's brede in no place of ther faces that was holle vneutt or mangled. And further did bury the bodies of the seid John & Henry in a secrete place in the feldes whereas the seid murder was comytted & done but yett not withstanding that the seid wylfull & shamefull murder was done neu<sup>r</sup> so secretly by the will of God it was knowen & came to lyght & knowlege of ye seid oratrix within ij or iij dayes aft<sup>r</sup> the seid murder so comytted & done by means wherof yo<sup>r</sup> said oratrix caused to be brought the ded body of the seid John her husband to be buried in England which hadd at least xvj mortall or deadly wounds and for so moche moste dradd sou<sup>e</sup>ign lorde that the seid most haynous willfull & abhominable murder was comytted & done within the realme of Scotland wherby the seid offenders & malefactours cannot by the ordre of yo<sup>r</sup> own lawes be ther of Indicted so ther punyshment cane haue by any suyt of appeal and also the seid S Roger & lyonell Grey be of so greatt auctorite powre & substaunce and so gretly ffrended & alyed within the seid countie of Northumberland that yo<sup>r</sup> seyde oratrix could neu<sup>r</sup> haue any remedie ageynst them ne none other of the seid murderers ne yett cane onles yo<sup>r</sup> moste petuous & gracious ffauor to her be shewed in that behalf. Therefore pleassith it yo<sup>r</sup> hignes of yo<sup>r</sup> most aboundaunte grace to grunte vnto yo<sup>r</sup> seid pore oratrix suche sharpe hasty & spedie pees to be directed vnto the seid opyn & willfull murderers comaundyng them & eu<sup>e</sup>y of them by v<sup>r</sup>tue of the same to appere before the lordes of yo<sup>r</sup> moste honorable counseil at a certain day at ye palace of Westm by yo<sup>r</sup> highnes to be lymytted ther to aunswere vnto the p<sup>r</sup>misses and further to pryde & ordeyn suche ferefull punyshment for the seid offenders in the p<sup>r</sup>misses wereby yo<sup>r</sup> subiectes may take Insampll to do or comytt any suche wilfull murder in tyme to come and yo<sup>r</sup> seid oratrix shall dayly pray to god ffor the psuacon of yo<sup>r</sup> moste royall estate long to Indure."



## IV.

NOTES OF STONE CELTS FOUND IN GLENSHEE, FORFARSHIRE, 1870 ;  
AND OF CLAY CONES (LOOM WEIGHTS) FOUND AT RAVENSBY,  
PARISH OF BARRIE, FORFARSHIRE. BY JAMES NEISH, OF THE LAWS,  
ESQ., F.S.A. SCOT.

At Drumour, which lies on a spur of Mount Blair, in Glenshee, some workmen were engaged in the summer of 1870 in removing boulder stones from the surface of the ground. Taking advantage of a mossy hollow,



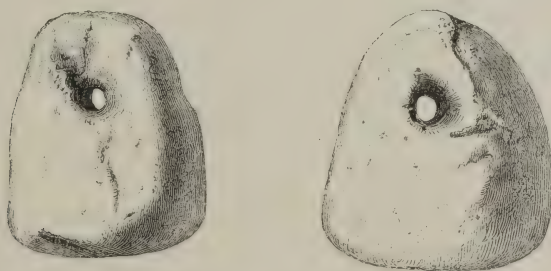
Polished Stone Celts,  $15\frac{1}{2}$  and 13 inches in length, found at Drumour, in Glenshee, Forfarshire.

they proceeded to excavate it, in order to roll in the stones. At a depth of about 5 feet were found two beautifully formed stone celts, which Robert Thomas, Esq., of Noranside and Drumour, now presents to the National Museum. There was nothing else found, unless it may be worth mentioning a small boulder of white quartz, shaped like an egg, very smooth on the surface, no doubt the result of natural influences ; on

one side, however, the writer was inclined to think that the surface might have been used for polishing the celts on.

Those implements seem to have been little used, for the markings of the tools employed in their formation are very distinct. Both are stained with brown spots, which, it is hoped, will be carefully examined and reported on.

In the neighbourhood of Drumour, some of the uncultivated slopes are covered with small cairns, hut circles, and long winding rows of stones.



Clay Cones (Loom Weights) found at Ravensby, Forfarshire.  
(4 inches in height.)

The reporter spent some time in digging amongst them, but with little result. Charcoal was generally found, and in one circle the centre was paved with flat stones, which the natives said they called the hearth stones.

A gamekeeper brought from his cottage a very small celt which he had found in a cairn twenty years ago near to Drumour, which is also sent to the Society for the sake of comparison.

Flint flakes and arrow-heads are frequently picked up in this neighbourhood.

*Clay Cones found at Ravensby.*—While part of a field at Ravensby, in the parish of Barrie, Forfarshire, which had been long under cultivation, was being trenched and levelled for garden ground, the workmen came to a place where the subsoil of sand and gravel had previously been disturbed to a depth of about 3 feet. This space they described as being shaped like the site of a tent; the soil here was mixed with charcoal and small fragments of bone. Lying together were found seven perforated

cones made from the native clay burned; near to them was part of a small enclosure like a fire-place, formed by stones on edge. One of those stones has a small round hole through it, and is similar to some found amongst the curious structures on The Laws, about three miles eastward. Long continued cultivation had, no doubt, removed more important vestiges of an early period. Ravensby, a name said to be of Danish origin, is near to the famous Camus stone, which tradition connects with a Danish general of that name. Boece tells us of a bloody victory obtained over the northern invaders in the parish of Barre. Mr Jervise, while doubting the story as to the Camus stone having been erected to the memory of a Danish general, says, in his *Memorials of Angus*, "that in no part of that county have been found so many traces of ancient sepulture and tumuli as in this district."

James Walker, Esq. of Ravensby, kindly presents to the Museum two of the cones and the largest portion of bone (ox) found.

[In February 1867 Alexander Morrison, Esq., of Bognie, presented to the Society's Museum a rounded mass of hard clay with a perforation through one extremity. It is partially broken, but measures 5 inches in length,  $3\frac{1}{2}$  inches thick, and 4 inches broad. Another of similar size and character was presented in February 1868. They were found "in digging the foundation for a new building in the Orchard Park of Montblairy," Banffshire, about 3 feet below the surface.<sup>1</sup> These have probably been also used as "loom-weights," and, with those above described, appear to be the first that have been observed in Scotland.—EDS.]



Clay Loom-weights found at Montblairy, Banffshire.  
( $5\frac{1}{2}$  inches in length.)

<sup>1</sup> See Proceedings, vol. ii. pp. 347, 371; and vol. iii. p. 68.

## V.

NOTE ON THE SCULPTURED STONE, WITH SPECTACLE ORNAMENT, RECENTLY DISCOVERED AT BILTON, YORKSHIRE. (A CAST OF THE STONE WAS EXHIBITED.) BY THE REV. CANON JAMES RAINE, YORK, IN A LETTER TO JOHN STUART, LL.D., SECRETARY.

The sculptured stone—a cast of which I have much pleasure in offering to the Society of Antiquaries of Scotland—(see annexed wood-cut), was found last year in the parish church of Bilton, about eight miles to the north-west of York. The stone was observed, I believe, in the first instance, by Archdeacon Toxes, and is remarkable as presenting the first undoubted instance of what appears to be the “spectacle” ornament, that has occurred in England. It is now more than probable that the mutilated ornament on the stone at Ripon, of which I sent you a cast some years ago, is the “spectacle” as well. You will recollect that I thought so at the time. Bilton is distant some ten or twelve miles from Ripon.

Cast of Sculptured Stone found at Bilton (28 inches high).





## VI.

NOTES OF A ROMAN SCULPTURED STONE RECENTLY DISCOVERED AT CUMBERNAULD, AND OF AN INSCRIBED STONE AT STIRLING, &c. (WITH PHOTOGRAPH AND COPY OF THE INSCRIPTION.) BY MISS C. MACLAGAN, RAVENSCROFT, LADY ASSOCIATE S.A. SCOT., IN A LETTER TO THE SECRETARY.



This Roman carved stone has no more history known to me than that it was turned up by the plough on one of the farms on the Cumbernauld estate. The farmer's name is Chalmers. I went to the spot where it was found, which is right over the Roman Wall. I also offered to purchase the stone for the Museum, but was told that "The Laird" was making a collection of such things, and of course the farmer must esteem his claim as the first. A few months ago, it was still in the *milk-house* of the farmer. (See fig.)

Of the Stirling Roman (?) Stone and its position I give you a pen-and-ink sketch. The rock on which the inscription is carved is in form more like a garden bench than



anything else, the letters being, as it were, upon the seat; it is on the brow of the hill facing the west. I have marked on the tracing certain letters, D.F. D F., which to me appear of a different date from the others.

[Miss Maclagan also sent for exhibition a large drawing of the sculpturings of cups and concentric circles on the Auchnabreck Rocks.]

## VII.

NOTICE OF A COLLECTION OF ANTIQUITIES IN STONE AND BRONZE FOUND UNDER BLAIR-DRUMMOND MOSS. BY THE LATE HENRY HOME DRUMMOND, OF BLAIR-DRUMMOND, ESQ.

[These antiquities were exhibited many years ago to the Society, and are again exhibited at the request of the Society, by George Home Drummond of Blair-Drummond, Esq., F.S.A. Scot., and the communication, illustrated by two plates of the antiquities, drawn by Mr Harding, of London, is reserved for publication in the "Archæologia Scotica," vol. v., now in the press].

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MONDAY, 10th April 1871.

DAVID MILNE-HOME, LL.D., Vice-President, in the Chair.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors:—

(1.) By ANDREW WILSON, Esq., S.S.C., F.S.A. Scot.

Three small bars or ingots of Silver, measuring  $2\frac{1}{4}$ ,  $1\frac{1}{4}$ , and  $\frac{3}{4}$  inches in length respectively, found at Cuerdale, near Preston, Lancashire, along with a large hoard of Silver Armlets, Cufic and Anglo-Saxon Coins, &c., in 1840.

A detailed description of the hoard is given in the "Archæological

Journal," vol. iv. p. 111. In digging for some repairs on a wall that had been built to protect the banks of the Ribble, the workmen found a large mass of Silver, consisting of ingots or bars of various sizes, a few Silver Armlets tolerably entire, and a number of fragments and ornaments of various kinds, cut into pieces of different dimensions and weights, amounting to upwards of a thousand ounces, exclusive of about six or seven thousand Coins of various descriptions, the whole being enclosed in a leaden chest, which was so decomposed that only small portions of it could be secured. The coins consisted of Anglo-Saxon pennies, pieces of the second race of French kings, a few Oriental, and some apparently belonging to some of those piratical Northern chiefs, who obtained at different times a temporary authority both in England and France. An attentive examination of these leads to the conclusion that this mass of treasure was deposited about the year A.D. 910, and the ornaments must be considered such as were worn about the time of King Alfred, or perhaps somewhat earlier, for none of them appear to have been in actual use at the time of deposit, but rather ornaments laid aside ready to be broken up for facility in melting. In their general character they bear a close resemblance to the hoard found at Skaill, in Orkney, in 1858. (See "Proceedings," vol. iii. p. 207.)

(2.) By JOSIAH LIVINGSTON, Esq., Chairman of the Scottish Chamber of Commerce.

A Collection of Pottery and other articles, consisting of:—

The lower part of a globular vase of reddish earthenware, about 6 inches diameter and  $5\frac{1}{2}$  inches high (broken).

Five small elegantly formed Cups of reddish unglazed pottery, 2 inches high and  $2\frac{1}{2}$  inches diameter (one entire, the rest broken).

Three-handled Cup of reddish glazed earthenware, 3 inches high and  $2\frac{1}{4}$  inches in diameter at the lip (broken).

The handles of three large earthenware Jars, with green glaze, and ornamented with the figure of a human head, and a band of a chevrony pattern of dots impressed by a comb.

A pair of Iron Pincers, 6 inches long.

A portion of a Shirt of Mail, formed of interlaced rings.

Four Tobacco Pipes.

These articles were obtained in excavating on the site of the New Scottish Wharf, Wapping, as detailed in the following note from Mr Josiah Livingston to Dr John Stuart, Secretary:—

EDINBURGH, 18th October, 1870.

Dear Sir,—The Scottish Wharf Company sometime since acquired a property at Wapping, fronting the river Thames. The houses standing on the site thus obtained were old, of substantial build, and showing that they had been the residences of persons of wealth. Mr Henley, M.P., pointed out one of them as the place of his birth. I believe these mansions had been built about 1740 or 1750. It was necessary to excavate the ground on which they had stood to a depth of 15 feet, and in doing so the workmen found various remains, which I have the pleasure of now sending to the Society, along with a letter from our manager, which explains itself.—I am, dear Sir, yours truly,

JOSIAH LIVINGSTON.

The Manager's letter is as follows:—

352 WATSON'S WHARF,  
HIGH STREET, WAPPING, 29th Sept. 1870.

Sir,—The articles now sent were found on the site of the new Scottish Wharf, Wapping, from twelve to thirteen feet below the surface, and beneath oak land-ties which appear to have been put in subsequently, and over which again other timbers are found which seem to have belonged to an old boat-yard; nearer the surface is a stratum of curiously mixed material, hair, bones, and horns, as of a fell-monger's yard.

At one point of the excavations a number of old walls are exposed, the bricks of which are thinner than those in present use in London, and not having the chalk and breeze mixture characteristic of the London stock. At another point an old wall is built on a fine bed of puddle, but this seems to have been put outside a prior wall to render it water-tight. The chain armour was found the lowest, but not quite in the same position as the other things.—I am, Sir, your obedient servant,

JAS W. BUTLER.

JOSIAH LIVINGSTON, Esq.

(3.) By ROBERT MERCER, of Scotsbank, Esq., F.S.A. Scot.

Old Padlock and Key, of curious workmanship. The Padlock, which is square in form, is  $4\frac{3}{4}$  inches wide, 3 inches thick at the lower part, and 4 inches high. The bolt enters the upper part, and fastens with a spring, which brings forward a dog's head to close the bolt-hole when unlocked.

(4.) By SAMUEL TALBOT HASSELL, Esq., Kingston-upon-Hull.

A China Plate, being part of a dinner service made for his grandfather, Francis Hall, Esq., at the newly erected pottery in Kingston to commemorate the beating off of Paul Jones by the Baltic trader, "the Crow Isle" (owned by Mr Hall), off the Yorkshire coast in 1779. The singular name, "the Crow Isle," was given to Mr Hall's ship from the name of the place in the Baltic to which she traded for deals. The design on the plate represents a ship and sloop in action, and beneath are the words, "Success to the Crow Isle."

(5.) By Mr DAVID CRICHTON, Duke Street.

A slab of Ivory, being a tranverse slice from an elephant's tusk, 6 inches in diameter, and half an inch thick, with 4 lines of an inscription in Indian characters.

(6.) By Mr DAVID BENNET, salmon-fisher, through ALEXANDER LAING, Esq., Newburgh, F.S.A. Scot.

Flint Spear Head, with stem,  $2\frac{3}{4}$  inches long,  $\frac{3}{4}$  in. wide, lozenge-shaped in section (wants the point end), found on the farm of Gattaway, parish of Abernethy, Perthshire.

(7.) By ALEXANDER MACLEAN of Ardgour, Esq., through Sir W. ELLIOT, K.S.I., F.S.A. Scot.

A Bronze flat Celt,  $5\frac{3}{4}$  inches long, by  $3\frac{1}{4}$  across the wide end, and  $1\frac{1}{4}$  across the small end, found in a cave on the mountain side, behind Ardgour House, in which was a considerable deposit of the bones of deer, sheep, and other animals.

- (8.) By Captain ALEXANDER GUNN, Braehour, through Colonel GUTHRIE of Scotscaidder, Esq.

A Bronze Palstave,  $4\frac{3}{4}$  inches long, by  $3\frac{1}{4}$  inches across the widest part of the face, and 1 inch across the small end, with flanges rising to half-an-inch in depth, and a stop-ridge  $2\frac{3}{4}$  inches from the small end. It was found when digging peats in a moss in the parish of Watten, Caithness.

- (9.) By Mr ROBERT MACADAM, Mill of Watten, Caithness, through ANDREW KERR, Esq., of H.M. Board of Works, F.S.A. Scot.

Iron Spear Head, 10 inches long (broken at the point), found in a short stone cist, at Watten, Caithness.

In a gravel hillock near the Mill of Watten, a short stone cist was found in the year 1867, in which were the remains of a skeleton, the skull and thigh bones being tolerably entire. In 1869 some further digging in the same hillock, about 20 yards further west, exposed two other graves lying parallel to each other, and about 20 yards westward from the first one, and distant from each other about 6 feet. In one of these the spear head was found. The whole neighbourhood is full of early remains.

In 1841 the large mound on the edge of the brae at the fork of the burn at Auchingale, lying to the south of the Mill of Watten, was opened by Mr William Larnach. The mound was found to cover the ruins of a Broch. A considerable refuse heap of shells, broken bones, and deer horns was found in connection with it. Human remains were also found, as they have been in almost every such mound that has been found in Caithness. A large cairn, called the Cairn of Auchintoft, is not far distant. On either side of the Parliamentary road at Greystones, still nearer the Mill of Watton, there were a number of small circular tumuli, which were levelled when the ground was brought into cultivation about the same time. The farm of Greystones takes its name from two large standing stones in the meadow near the burn, only one of which now remains. There was attached to them the usual tradition of a battle with the Danes. When the house of Greystones was being built, a small tumulus, in what is now the garden attached to the farm-house, was found to contain a cist about 4 feet long, and nearly 2 feet deep, covered with a large flagstone. In



the cist were "Calcined" Bones, and an Urn which fell to pieces when lifted. In the spring of 1840, Alexander Bremner, the landlord of the adjoining hostelry, in trenching a plot of ground near the river, exposed a circular wall 12 feet in diameter. The interior was filled with ashes and rubbish, among which he found a stone celt, 17 inches long, 9 inches across the broadest end, and 4 inches across the narrow end. It is described as "shaped like a tailor's lapboard," and is probably the largest stone celt on record if the measurements given are correct. Along with it were found two round balls of granite.

(10.) By C. W. BOASE, Esq., F.S.A. Scot., the Author.

A Century of Banking in Dundee. From 1764 to 1864. 8vo. Edinburgh, 1867.

(11.) By the Rev. CHARLES ROGERS, LL.D., F.S.A. Scot., the Author.

The Poems of Sir Robert Aytoun. With a Memoir. By the Rev. Charles Rogers, LL.D. Privately printed. 8vo. London, 1871.

Genealogical Chart of the Family of Bain.

(12.) By the LORDS COMMISSIONERS OF H.M. TREASURY, through the  
MASTER OF THE ROLLS.

Calendar of State Papers. Colonial, East Indies. 1617-1621. 8vo.

Letters and Papers, Foreign and Domestic. Henry VIII. Vol. iv.  
Part 1. 1524-1526. 8vo.

(13.) By JOHN STUART, LL.D., Secretary.

Illustrations of the Topography and Antiquities of the shires of Aberdeen and Banff (Spalding Club). Vol. i.

(14.) By JAMES GIBSON GREIG, Esq.

Index or Abridgment of the Acts of Parliament. By Sir James Stewart. 12mo. Edinburgh, 1707.

Memoirs concerning the Ancient Alliance between the French and Scots. 8vo. Edinburgh, 1751.

Report on the Statements of the Lord Provost and Mr A. Bruce respecting the Affairs of the City of Edinburgh. By John Greig. 8vo. Edinburgh, 1819. Pp. 57.

Titi Livii Patavini Historia. 12mo. Amstel. 1635.

Tentamen Physiologicum Inaugurale. By James C. Maclaurin. 8vo. Edinburgh, 1788.

The following Communications were read :—

### I.

NOTICE OF A HIGHLAND TARGET, HAVING EMBOSSSED UPON IT THE COGNISANCE OF THE LORD OF THE ISLES. BY JAMES DRUMMOND, Esq., R.S.A., F.S.A. SCOT. (PLATE XIX.)

There is a class of Scottish antiquities to which hitherto comparatively little attention has been paid by the archæologist. I mean the warlike weapons, offensive and defensive, of our Highland forefathers, many of which were used down to a comparatively recent period. Of all such much ignorance seems to prevail, and among none more so than the Highlanders themselves, who almost invariably answer inquiries as to age, &c., that they had no doubt they had been so used from time immemorial.

At present I wish to call attention only to one of these Highland weapons, the target, and on some future occasion may notice others. No weapon of war has at different periods and among different nations assumed so many shapes as the shield, but the circular and oval seem to have been the most common and the most continuous in their use, and it is with these we have at present to do.

The round shield was an early Greek, Etruscan, and Roman form ; it was also used by the Assyrians and Mexicans. On the Trajan column both the Romans and Dacians, again, have them nearly all of an oval form ; while on the Roman sculptured stone found near Carriden, Linlithgowshire, the ancient Britons have them of an oblong square, a boss in the centre, and the Roman soldier of an oval form. The Scandinavian and British shield of bronze was circular, and was chased

or struck up in the metal itself, generally having a large boss in the centre, with a series of concentric circles, between which the space was filled up with rows of small nail-head like studs. Occasionally there are more large bosses than the central one, these again surrounded by smaller studs in rows; below the central boss is the handle.

I should suppose, however, that the wooden shield was more common than the bronze one, from the immense number of bosses which have been found all over the country, the wood having rotted away, leaving this, which is of iron or bronze. During the excavations in the peat mosses of Thorsbjerg and Nydam, in South Jutland or Slesvig, under the sanction of the Danish Government, and conducted by Conrad Engelhardt, between the years 1858 and 1863, remains of wooden shields were found in great abundance. Numerous iron and bronze bosses have been found in Anglo-Saxon graves; one was found in Yorkshire, in a perfect state, having a bronze boss and a metal rim.

There are in our Museum the pieces of some wooden object, very much decayed, and called in the catalogue a wheel; but from the loose way in which they were joined, it was difficult to say what it had been. On examining this, Mr Anderson and I were certain it could not have been a wheel, seeing, when it was carefully put together, it was oval. I was now confirmed in my conjecture that it had been a shield, there being enough to show that the centre had been hollowed out for the hand, which on the outside would form the boss. It and part of another was found in Blair-Drummond Moss, and presented to the Museum by the late Henry Home Drummond, Esq. The fragments of another were found in the same moss in 1831, and somewhere near it a quern or hand-mill, fashioned from the section of an oak; there were also some flint arrow-heads. Fortunately for comparison, a perfect specimen has been found since, in Ireland, in the parish of Kiltubride, county Leitrim. It is  $26\frac{1}{2}$  inches long by 21 inches broad, and  $\frac{1}{2}$  inch thick. Besides the boss, which is perfect and 3 inches high, there are seven slightly raised concentric circles, the whole carved out of one piece of wood, in this respect differing from the Blair-Drummond one, which is composed of three pieces, most ingeniously put together by two mortices through the whole breadth, into which are put two pieces of wood about 2 inches broad and  $\frac{1}{2}$  inch thick, these not only holding it

together, but preventing warping. The centre is a solid piece of wood, which is hollowed out for the hand, and is  $7\frac{1}{2}$  inches in diameter, the two edges gradually bevelled to make them join firmly. It is 2 feet long, 1 foot 7 inches broad, and at thickest point  $1\frac{3}{4}$  inches, and gradually thinning towards the outer edge, where it is about 1 inch.



Wooden Shield found in Blair-Drummond Moss.  
(2 feet in height.)

There can be no doubt that the Highland target is the traditional continuation of these early bronze and wooden shields, but having some features different. It is almost invariably made of wood, and covered with leather, the instances to the contrary, when they have been made of iron or steel, being the mere whims of individuals. The leather is very generally embossed with Celtic ornamentation, a sort of *repoussé* work, in the



form of the twisted interlacing ribbon pattern, with scroll leafage filling up odd corners of the design ; now and then rude attempts at animals, sometimes initials and a date, the whole design divided by concentric circles of brass nails and bosses, the latter often engraved. In this style of ornament they resemble the early bronze shields, with their bosses and smaller studs. Occasionally they were converted into formidable weapons of offence, by having a strong and long pike screwed into the centre. The question naturally suggests itself, Where were these made ? Certainly not in the Highlands ; my own opinion being that for the West Highlands, at all events, they were made in Glasgow. In confirmation of this opinion, my friend, the late Joseph Robertson, told me that in the MS. account of one of Queen Mary's masques, Highlanders are mentioned as appearing in their native dress of skins, and having Glasgow targets. Mr Dickson was kind enough to make search for this, but did not succeed in finding it, although he also thinks he saw it somewhere. These targets generally have so much similarity in design that we cannot help thinking they must have been made at one place in great quantities. In the specimens figured by Skelton, Logan, and Dr Stuart, this likeness is very apparent. The specimen to which I would now call attention is not only different from these in the beauty and symmetry of the design, but is peculiar from having embossed at its centre the heraldic cognizance of the Lord of the Isles, of which Nesbit says, "The Macdonalds of the Isles carried, as in our old books, a double-headed eagle displayed." It must not be thought that leather-covered targets were peculiar to the Highlands. In mediæval times they were common in many European countries. Spain, in particular, was famous for them ; and it may not be improbable that this was made there for one of the Macdonald chiefs, there having been a great traffic between the West Highlands and Spain, hides being exchanged for armour of all sorts, swords in particular. Spencer also speaks in his "View of the State of Ireland," 1586, of the northern Irish, especially of the Scots, as having round leather targets, often coloured in rude fashions. In this respect they differ from those of our Highlanders, as I am not aware of theirs ever having been painted. These targets differ from the early British and Scandinavian ones in having an arm-piece as well as a handle, the early ones having only a handle opposite the central boss. On the Trajan column all the shields seem to have the





*( Twenty Inches in diameter )*



double arrangement, while the Greeks used an arm-piece and a handle towards the rim. In Dr Stuart's "Sculptured Stones of Scotland" will be found many specimens of these early circular shields. In one case there are a number of large bosses. A cast of this stone (Dull, Perthshire) is in the Museum. The shields of the sculptured figures of Highland chiefs have always the triangular form, and on one tombstone only have I seen a circular shield, viz., at Kilmory, Argyllshire.

## II.

NOTICE OF A CINERARY URN, CONTAINING A SMALL-SIZED URN (IN WHICH WERE THE BONES OF A CHILD), DISCOVERED IN FIFE-SHIRE; WITH NOTES OF SIMILAR SMALL AND CUP-LIKE VESSELS, IN THE MUSEUM OF THE SOCIETY OF ANTIQUARIES OF SCOTLAND. BY JOHN ALEX. SMITH, M.D., V.P., S.A. SCOT.

The small urn exhibited was discovered in the month of February 1866, and its exhibition now is due to the zeal of the keeper of our Museum, Mr Joseph Anderson, who, happening to observe a stranger closely examining the small urns in our museum, entered into conversation with him, and learned that he had in his possession two urns of a similar kind. At Mr Anderson's request, the urns were forwarded for examination, and are now exhibited to the Society.

The first urn is of a flattened and rounded form; it measures  $2\frac{1}{2}$  inches in height, and  $4\frac{3}{4}$  inches in its greatest diameter, rather below the middle of its height, from which it tapers upwards to its open mouth, which is 3 inches in diameter, and downwards to its small base, which measures  $1\frac{1}{2}$  inches across (see the annexed figure). The urn is formed of a yellowish clay, and is ornamented round the upper part with a series of straight horizontal and parallel lines, next a belt is left, which is divided by short vertical lines into quadrilateral spaces, alternate halves of which are ornamented by oblique parallel lines.

The tapering lower part of the urn is also ornamented by a series of horizontal parallel lines, below which are vertical lines, dividing it into regular spaces, covered with the herring-bone ornament. The base of the urn is plain or unornamented. The urn is pierced at its greatest diameter

with two small holes about  $1\frac{1}{2}$  inches apart; and the opposite side of the urn, which has been unfortunately chipped, still shows traces of one hole, at least, of a corresponding kind. These holes have been made with a sharp-pointed instrument, passed from the outside inwards to the interior of the vessel, when the clay of which it is formed was soft. The urn was discovered by a man while ploughing deeply in a field, on a small hill called the Black Hill, on the farm of Wester Bucklyvie, Fifeshire. The plough struck on what was supposed at first to be a boulder stone, but was soon discovered to be the bottom of a large clay urn, which showed



Fig. 1.

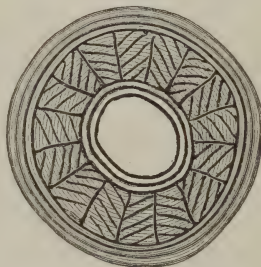


Fig. 2.

Fig. 1. Urn found in a Cinerary Urn at Wester Bucklyvie, Fife ( $2\frac{1}{2}$  inches in height).

Fig. 2. Under side of same Urn.

little or no ornament on its surface, and appeared to be a foot or 15 inches in height. It was rather narrower at each extremity, and bulged out most in the middle. Unfortunately, it was so shattered by the ploughshare, that it could only be lifted in portions, and was seen to have contained or covered a heap of burnt bones, which fell out when it was taken up, and also this small urn, which was standing filled with bones; the large urn having been placed over the small urn and its contents, and the other burnt bones. Indeed, the mouth of the large urn was not a great deal wider than was sufficient to enclose the small urn. The bones found were considered to be those of children, by the persons who examined

them, albeit unskilled in human anatomy though they were, as they observed what appeared to them to be portions of shoulder-blades of different sizes, which they supposed might possibly be those of children of different ages. On making a careful examination of the contents of the small urn, I found it still contained the calcined remains of several bones, which, from their character and small size, might probably have belonged to a child. The urn also contained a compact mass of indurated ashes, adhering to its interior, from which portions of bone were picked out, and also the fang of a human molar tooth (now exhibited), which, on examination, I have no doubt is part of the first teeth, a milk molar of a child. My friend Mr William Turner, Professor of Anatomy in the University, F.S.A. Scot., has also examined the bones and tooth, and agrees with me that they are those of a child. The milk molars of a child, I may mention, generally make their appearance in the mouth from the twelfth to the twenty-fourth month, so that here in this small urn we have evidence of the incinerated remains of a young child, being interred along with the burnt bones enclosed in the larger urn, in which the small urn was laid. The bones in the large urn were probably the remains of the mother of the child. From the presence of a small seam of black earth, apparently arranged in a square shape, and enclosing the large inverted urn all round, it was supposed that it might originally have been enclosed in a wooden box, of which this black substance was the decayed remains. For all the information about the discovery of this small urn, and indeed the preservation of the urn itself, we are indebted to Mr William Telfer, The College, Fordel, near Inverkeithing, Fifeshire. The urn is now preserved in the local museum at Jedburgh.

This urn, I may remind the Fellows, belongs to the class of small fictile vessels, which, for want, perhaps, of a better explanation, have been described as lamps, censers, incense cups, or thuribles. They have been generally found along with burnt bones, either enclosed in, or covered by, an urn, but in some cases they have apparently been simply laid beside the larger cinerary urn, and they have been found in circumstances of a corresponding character both in Scotland, England, and Ireland.

From the interest excited among antiquaries by the small size and peculiar shape of these urns, I have thought the different examples pre-



served in the Museum might be brought together under the notice of the Fellows of the Society.

In the Museum there are now fourteen specimens, apparently belonging to this class of small urns; of these, one was found in the north of England, two in Ireland, and the rest are believed to have been discovered in Scotland.

These small vessels have been grouped together, not only from their general correspondence in size, but also from the apparent similarity of their character. They vary, however, in shape and in ornamentation, but may perhaps be divided into two general groups or classes.

First, those which are more or less of a compressed or flattened form; and Second, those of a more simple rounded or cup-like shape.

In all of these varieties we find some specimens pierced with a pair of small holes—sometimes on one side only, in others on both sides,—while in others these holes are wanting altogether.

I shall first describe those more flattened in character, which include those that are the smallest in size. These urns vary somewhat in shape, some being rather larger in size, the upper part of the urn more expanded, larger, and deeper, the bottom being more flattened, and often terminating in a small base; until we find in some urns the sides becoming nearly vertical, and the bottoms almost flat. I shall describe them in the order of this gradual change in form; from those of a compressed character, towards those with the upright sides and flattened bottom. The small pair or pairs of holes are generally found at the greatest circumference of the urn, from about the middle of its height, to near the bottom of the vessel.

I. A very small, rather rudely formed urn, of a compressed flattened shape, formed of reddish clay. It measures  $1\frac{1}{2}$  inches in height; its greatest diameter being  $3\frac{1}{2}$  inches, where it is pierced with a pair of small holes,  $1\frac{1}{2}$  inches apart, on one side only. From its greatest diameter it tapers rapidly upwards to its mouth, which measures  $1\frac{3}{4}$  inches across, it also tapers rapidly downwards to a small concave base or bottom, about an inch across which is plain or unornamented; the cavity of the vessel being very small.<sup>1</sup> It is ornamented round the upper part with

<sup>1</sup> Proc. vol. v. p. 13.

a pattern of a couple of rude triangles, placed point to point, ornamented with two parallel lines, and by a single vandyke pattern, alternately ; the pattern being four times repeated. The lower half of the vessel is



Small Urn of reddish clay ( $1\frac{1}{2}$  inch high).

ornamented with a repetition of the rude double triangular-like figures. Unfortunately its history is not known (see woodcut).

II. A small urn of reddish clay, rounded and compressed in shape, but



Small Urn found in a cairn at Benachie.  
( $1\frac{3}{4}$  inch high.)

not so much so as the one last described. It measures  $1\frac{3}{4}$  inch in height. The bottom of the urn is small, measuring  $1\frac{1}{4}$  inch in breadth, and from this part it expands rapidly to its greatest diameter of 3 inches about the middle of its height, and then contracts again upwards to its mouth, which is  $1\frac{1}{2}$  inch across.

It is covered all over with alternating vandyke ornaments, each covered with parallel lines, running in opposite directions; also with straight lines running round the mouth, and the greatest circumference of the vessel, where it is pierced with two small holes,  $\frac{3}{4}$ ths of an inch apart, on one side of the vessel only (see the preceding woodcut).<sup>1</sup>

The mouth is ornamented with short lines, and the small base or bottom is also ornamented with four triangles meeting in the centre, and covered with parallel lines, the intersecting lines of which may perhaps be described as a cross. It was found in a tumulus or cairn, along with another larger and somewhat similar vessel to be afterwards described, on the lower part of the hill of Benachie, Aberdeenshire.

III. Another vessel of closely corresponding character, but larger in size, was found in the north of England, at the burial-ground belonging to old Pendrith (Fort Patrianus of Camden's *Britannia*), about six miles from Penrith. It measures 3 inches in height, and  $4\frac{1}{2}$  inches in greatest diameter, just below which it is pierced by a pair of holes, 1 inch apart, on one side only of the vessel.<sup>2</sup>

The upper surface of the urn is ornamented by small chevron-like ornaments, between two straight and parallel horizontal lines, which surround the vessel; and this is repeated at its greatest diameter, the space between these bands being filled up by a series of short vertical lines. The under surface of the vessel is ornamented by a concentric circle, then a series of rude chevrons laid laterally, or herring-bone-like patterns; two concentric circles surround the base of the vessel, which is unornamented, and measures  $1\frac{3}{4}$  inch in width (see fig. 1 of the annexed woodcut).

IV. The next urn was found in a mound or tumulus, enclosing the foundations of an "ancient ruin," in the island of Ronaldshay, Orkney.

It considerably resembles the one last described; it is formed of yellowish clay, and measures  $2\frac{3}{4}$  inches in height. Its greatest breadth of 4 inches is towards the lower part of the vessel, where it is also pierced with two pairs of small holes, 1 inch apart, one on each side of the base; from this part it tapers upwards to a mouth, 3 inches across; and downwards rapidly

<sup>1</sup> Proc. vol. v. p. 13.

<sup>2</sup> See Proc. vol. iii. p. 48.

to a small base, measuring 1 inch across.<sup>1</sup> It is ornamented round the mouth with a band of three concentric circles, and below this a double chevron ornament, then at the greatest diameter five parallel concentric circles, and below, an alternating vandyke ornament, covered with oblique parallel lines; other three concentric circles surround the small concave base, which is unornamented (fig. 2 of the annexed woodcut).



Fig. 2.

Fig. 1.

Fig. 3.

Fig. 1. Urn found at Old Pendrith (3 inches high).

Fig. 2. Urn found in Ronaldshay, Orkney ( $2\frac{3}{4}$  inches high).

Fig. 3. Urn found near Dunbar ( $2\frac{1}{2}$  inches high).

V. Another urn, very similar in character to the last, was found near Dunbar. It measures  $2\frac{1}{2}$  inches in height, and  $3\frac{3}{4}$  inches in greatest diameter near the base, where it is pierced with a pair of small holes,  $1\frac{1}{8}$  inch apart, on one side only of the urn. It is ornamented by two parallel lines running round the mouth, and next by two intersecting lines, which form a series of small lozenges covered with parallel lines, and below this, another parallel line; the under part of its upper surface being ornamented by a herring-bone-like pattern, enclosed between two parallel lines. The lower part of the vessel is ornamented by a band of vandyke

<sup>1</sup> Proc. vol. iii. p. 485.



patterns, alternately plain and covered with parallel lines, a similar and smaller band surrounds the small base of the vessel, which displays a rude lozenge-shaped figure covered with parallel lines (fig. 3 of the woodcut).<sup>1</sup>

VI. This urn was found along with the small urn already described, in a tumulus at the foot of the hill of Benachie.<sup>2</sup> It is formed of a yellowish clay, and measures 2 inches in height; its greatest diameter of 3 inches is at the bottom of the vessel, which is flattened, but has a slightly project-



Small Urn found in a cairn on the Hill of Benachie (2 inches high).

ing ring, forming a small base  $1\frac{3}{4}$  inch in breadth. Just below its greatest diameter, on the commencement of its under side, it is pierced with a pair of holes,  $\frac{7}{8}$ ths of an inch apart; and a similar pair of holes,  $1\frac{1}{8}$  inch apart, pierce the opposite side of the vessel.

From its greatest diameter below, it tapers gradually upwards to a wide mouth, 2 inches across. It is ornamented by a large chevron-like pattern, which runs round the vessel, and is enclosed by a straight line above, and two parallel lines below, all marked as if with a twisted cord, the base being plain (see the preceding figure.)

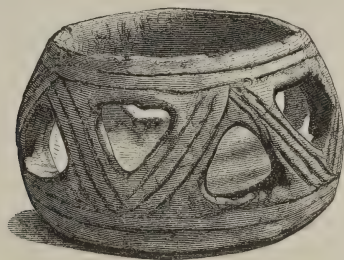
VII. The next urns of this class which I have to notice are distinguished by a series of large fenestra or perforations through their sides. These urns were found in Ireland, and belong to the Bell Collection.

<sup>1</sup> Proc. vol. iii. p. 485.

<sup>2</sup> Proc. vol. v. p. 13.



One of these is a perfect urn, formed of reddish clay, and measures 2 inches in height, and 3 inches in greatest diameter, and about  $2\frac{3}{4}$  inches across the mouth. It is ornamented by a series of alternating triangular perforations round its sides, with parallel lines between (see the following woodcut).



Small urn found at Killucken, Tyrone, Ireland (2 inches high).

Two large cinerary urns were found near each other in the townland of Killucken, county Tyrone; one was much ornamented, and the other plain; the former measured 14 inches high and  $10\frac{1}{2}$  inches across the mouth; it was, like the other large urn, in an inverted position, and they both contained calcined bones. The small perforated urn first described was found erect in the large ornamented urn. An account of the discovery of the urn is given by Mr Bell in the "Journal of the British Archaeological Association," vol. i. p. 243, 1846.

VIII. The other is a smaller portion of another broken urn of reddish clay and of similar character. It was also found in Ireland.

Urn of a similar kind, pierced round their sides with numerous lozenge and oval apertures, have been also occasionally discovered, along with incinerated remains, in England and in Wales.

IX. Is a plain or unornamented urn of yellowish clay and of a rounded form, becoming rather suddenly contracted above. It is  $2\frac{1}{2}$  inches high, and 4 inches in greatest diameter, and  $2\frac{1}{2}$  inches across the mouth; the greatest circumference being a little below the mouth, and the under side of the vessel the deepest, differing in this respect from those previ-

ously described. It contained burnt bones, but its history is not known.

X. The next urn is of a similar shape to the last. It is formed of reddish clay, and measures 2 inches in height, and  $1\frac{3}{4}$  inch across the mouth, the greatest diameter is 3 inches towards the upper part of the urn, where it is pierced with a pair of holes,  $1\frac{1}{2}$  inch apart, on one side only, and it tapers downwards to a small base of about 1 inch across,—unfortunately it has been much chipped on its sides. The upper part is ornamented with a herring-bone pattern, and the rest of the urn is plain. It was found along with a number of cists containing urns, in some excavations at Crailing Hall, near Jedburgh, and was contained in a larger wide-mouthed cinerary urn of blackish clay,  $4\frac{1}{2}$  inches in height, covered over with a rude pattern of a series of short lines, showing toothed or twisted cord markings. This is the second urn referred to at the commencement of this paper.

We now come to the Second group or division of these urns, namely, those of a more simply rounded character or cup-like form, some of them being almost entirely without ornament of any kind; these urns are also, in some instances, pierced with the usual pairs of small holes.

XI. A portion of a small cup-like urn, ornamented with concentric circles, and alternating vandyke patterns covered with parallel lines, and below them two straight lines or concentric circles; the lower part being plain. The mouth of the vessel is thick, and is ornamented on its lip with three parallel longitudinal lines, or concentric circles. It measures  $1\frac{1}{2}$  inch in height, by  $3\frac{1}{4}$  inches in greatest breadth, and  $2\frac{1}{2}$  across the mouth. It was discovered on Arthur's Seat, near Samson's Ribs, when the Queen's Drive was being made some years ago. The workmen discovered a sepulchral deposit, containing a cinerary urn, which was broken to fragments, and probably this small cup-like urn,—although it is stated to have been found with some bronze celts, a little more to the eastward; the account of the navvy who found it being not altogether to be depended on. The details of its discovery are given in Dr Daniel Wilson's "Prehistoric Annals," 1851, p. 228–29; and the urn was presented by him to the Museum, in June 1863.<sup>1</sup>

XII. Portion of another small cup-like urn, apparently measuring  $2\frac{3}{4}$

<sup>1</sup> Proc., vol. v. p. 127.

inches in height, and about 4 in diameter. It is ornamented with alternating vandyke patterns and straight lines, the same being repeated on the under surface, and was found on levelling a tumulus on the Dighty Water, near Monifieth, Forfarshire; when found, it was filled with black earth and burnt bones.<sup>1</sup>

XIII. and XIV. These are two small rounded urns of coarse clay, without ornament of any kind. One measures  $2\frac{1}{4}$  inches in height, by 3 inches diameter across the mouth. It is pierced with two small holes, about  $1\frac{1}{2}$  inch apart, on one side of the vessel.

The other urn measures  $2\frac{3}{4}$  inches in height by  $3\frac{1}{2}$  inches in greatest diameter, and  $2\frac{3}{4}$  inches across the mouth; it is also of a rounded form, and, like the other, is somewhat contracted in shape at the top and bottom. It is also pierced with a single pair of small holes, 1 inch apart, at about the middle of its height.

A group of cinerary urns was discovered at Westwood, on the Tay, near Ferryport, in 1867. It consisted of eight large urns with overhanging rims, generally ornamented with chevron or herring-bone patterns, disposed in a circle round a central urn, the diameter of the circle being about 15 feet. The urns varied in size from 5 to 15 inches in height. Some were placed erect, others inverted, and all contained burnt bones. In two of the urns these two small cups were found, filled also with burnt bones, and lying above the other bones in the large urns. In one of the erect urns another urn was enclosed in an inverted position, also covering burnt bones.

This discovery was described by Andrew Jervise, Esq., F.S.A. Scot., in vol. vi. p. 388 of the Proceedings of the Society, where the urns are figured and described.

XV. The last urn is of blackish clay, a regularly rounded or globular cup-like vessel, apparently made by the hand, and without ornament, except a row of punctured dots along the edge of its slightly everted lip. It measures  $2\frac{1}{2}$  inches in height, and  $3\frac{1}{4}$  in greatest diameter, and  $2\frac{1}{2}$  inches across its mouth. Its history is, unfortunately, not known. Judging from its appearance, however, and its general resemblance to some hand-made clay vessels in the Museum to be afterwards described, I am inclined to think it must belong to the same class of vessels made for

<sup>1</sup> See Proc. vi. p. 313.

domestic use in some of the Hebrides in recent times, indeed almost in our own day (see woodcut).



Cup-like Urn ( $2\frac{1}{2}$  inches high).  
(Probably of recent manufacture in the Hebrides).

It might be interesting to collect the details of all the instances of the discovery of these peculiar small cup-like urns in Scotland. I shall, however, only refer to other three examples.

The first I shall notice is given in the "New Statistical Account of Scotland," vol. v. 1845, in the account of the parish of Beith, in Ayrshire. On the lands of Townend of Threepwood, a large urn was found of a size capable of holding about 6 gallons; it contained calcined bones, and also a small open or cup-like urn of hard burned clay as if formed by the finger and thumb, and in it were two perforations, as if for fixing it to some other body, probably, it is said, to the larger urn in which it was found, or to attach a lid or cover. Another small urn was found by itself at a small distance from it. The writer supposes the small urns were doubtless for receiving the ashes of the brain or heart, and the large urn those of the rest of the body. The date of this account is May 1839.

Another example is recorded in our "Proceedings," vol. ii. p. 11, by the Rev. Mr Lawson—"Notice of Urns and Sepulchral Monuments discovered in the Parish of Creich, on the property of Carphin." He tells us several cinerary urns were found; and in one instance as many as fourteen large cinerary urns were discovered, running in nearly a straight line from east to west, at about 3 feet apart from one another; some were



erect, but they were mostly inverted; and in one of the urns of this row a small cup-like urn filled with earth, but without bones, was discovered.

The last instance I shall refer to was brought under the notice of the Society by the late Rev. Dr Chalmers, of Dunfermline, and probably belongs to a later date. In May 1857 a small mound or cairn of stones and earth was opened at Craigdhu, near North Queensferry. The cairn measured 40 to 45 feet in circumference, and in it three cists were discovered; the largest was 5 feet long and about 2 feet broad, another was about  $3\frac{1}{2}$  feet long by 20 inches broad, and the third about  $2\frac{1}{2}$  feet by a foot broad. In the larger cist was found the jaw-bone and other remains of a skeleton, and also the broken portions of an inverted urn about a foot in diameter, which covered some calcined bones and a small cup-like urn, like a food-vessel, about 2 inches in diameter, containing calcined bones. Both vessels were ornamented with short, straight, and sloping lines, and the small vessel with zig-zag lines on its lower surface. Full details, with a figure of the urn, are given in the "History of Dunfermline, by Dr Chalmers," 1844, vol. ii. p. 387. This very curious urn is still, I believe, in the possession of Mrs Douglas, the proprietor of the locality where it was found, and it is to be regretted that it has not been deposited for preservation in our national collection of antiquities. In this case have we to suppose a wife and child both sacrificed at the death of a husband to accompany him on his journey to the world of spirits?

In these various instances you have examples of the different circumstances in which these small urns are generally found.

In a learned and important memoir "On Ancient Interments and Sepulchral Urns found in Anglesey and North Wales," from notices by the Hon. W. Stanley, M.P., by Albert Way, Esq., M.A., F.S.A., Hon. Mem. S.A., Scot., &c., which is published in the "Archæologia Cambrensis," vol. xiv. 1868, the whole subject of the varied characters and uses of sepulchral urns has been carefully considered and fully discussed. In treating of this class of small urns, "incense cups," or "censers," he mentions the various theories that have been suggested for their use;—that they were employed for holding tinder, or for conveying fire or glowing embers—it may be, to the funeral pile—or for adding inflammable substances to augment the flame of the funeral pile, or perhaps to hold aromatic



perfumes of some kind to diminish the disagreeable odours of the burning corpse, as was done in India. He considers it not improbable that they might also have been used for domestic purposes, as well as put to sepulchral uses; and he is inclined to think that the so-called drinking cups and food vessels found in cists along with skeletons were probably also the vessels in ordinary domestic use.

From the fact of the perforations through the sides of these small urns, and the ornamentation frequently occurring on the bottom of the vessel, it has been supposed that some of them may have been used for suspension above the level of the eye. They have, therefore, been considered by some antiquaries to have been lamps or vessels for holding fire.

Mr Way in his paper also refers to the fact of a small ornamented bowl-shaped cinerary urn, only  $2\frac{5}{8}$  inches in height, which was found within a large cinerary urn, and was ascertained by the late Mr Queckett to contain portions of the skeleton of a very young infant; probably the remains of a mother and her infant.

Other antiquaries, as Mr Llewellynn Jewitt in his valuable work on "Grave Mounds and their Contents, a Manual of Archæology," 1870, consider these small urns to be not "incense cups, but" simply "small urns made to receive the ashes of an infant, perhaps sacrificed at the death of its mother, so as to admit of its being placed within the larger urn containing the remains of its parent" (p. 107); "and from their usually containing small calcined bones, that they were the receptacles for the ashes of the infant, to be buried along with those of its mother." He mentions that they vary in form and ornamentation, that some are pierced with holes as if for suspension, and one or two examples have handles at the side. At the latter part of his book (p. 265), Mr Jewitt gives a figure of the contents of a grave mound at Selzen, on the Rhine, by Lindenschmidt, in which is the skeleton of a warrior, with remains of his horse and trappings, also a large urn and two small cup-like urns, one being apparently very small. He does not, however, state whether he considers these were cinerary urns, or simply food vessels.

In a paper on "Ancient Feeding Bottles for Infants," read before the Society at a recent meeting, I referred to the similarity, or rather identity, of the pottery found in the ruins of buildings and also in the Gallo-

Roman cemeteries of France; and I am much inclined to take a similar view of the pottery found with sepulchral deposits in our own country. In the various kinds discovered, I am inclined to believe that you have specimens of some of the fictile vessels of ordinary domestic use in early times; the large urns, containing burnt bones and ashes, the food vessels, and the drinking cups, found along with human skeletons in the tombs, like the ornaments and weapons also found in them; being those used by the same people while living. Indeed, if I mistake not,



1. Food-vessel with spoon, found near Inverurie, Aberdeenshire (urn  $6\frac{1}{2}$  in. high).
2. Spoon (?) of ox horn (11 inches long).

in a recent work on the inscriptions and drawings discovered on the walls of the catacombs at Rome,<sup>1</sup> you have a representation similar to those of the Last Supper, where large vessels, not unlike our large cinerary urns, are placed in the foreground filled with provisions for the table. It is well known that the indwellers of the Swiss lake houses also used large and coarse clay vessels, for storing up their provisions for future use.

<sup>1</sup> Northcote and Brownlow's "Roma Sotteranea," 1845.

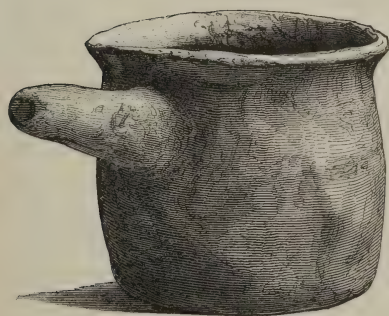
One of the class of food vessels was found in a short stone cist, along with a human skeleton at Broomend, near Inverurie, Aberdeenshire, to which I had the pleasure of formerly calling the attention of the Society,<sup>1</sup> as it seemed to have had placed in it something which certainly looks not very unlike that common accompaniment of a food vessel, in our day at least, a ladle or spoon, formed of cow's horn, now split and bent by damp and age, and is the only instance of the kind found in a cist that has yet been observed, as far at least as I am aware<sup>2</sup> (see the preceding figure).

Some may point to the very rude character of much of the pottery found with the dead, and the consequent unlikelihood of their ever having been used for domestic purposes. We are told also by some archæologists who are perhaps rather too fond of classifying antiquities, in accordance with imaginary periods of time, that the hand-made pottery belongs especially to what they style the Neolithic period; in their more ancient or Palæolithic period indeed, they fancy man had not got the length of making pottery at all. In our Museum we have a series of hand-made vessels, sufficiently rude in their style and ornamentation to have belonged to the earliest Neolithic period (some of which are figured in the annexed woodcut). For the drawing of the largest of these crogons I am indebted to Mr Muir, the learned author of the "Characteristics of Old Church Architecture, &c., in Scotland," from whose valuable work it is taken. These vessels, however, have been actually used as domestic utensils in our own day and in our own country, in the Hebrides. They are shaped by the hand, fired or baked with burning peat, and milk is then poured into them when they are still very hot, in this way they are made fit to hold fluids; and they are then employed for cooking and other purposes of ordinary domestic use. Dr Arthur Mitchell, Sec. S.A., Scot., who presented these vessels to

<sup>1</sup> Proc. vol. vii. p. 561.

<sup>2</sup> The Rev. J. M. Joass, Golspie, in a paper read before the Society, 9th January, "On the Brochs or Pictish Towers of Cuin-Trolla, Cairn-Liath, and Craig-Carril, in Sutherland, with notes on other Northern Brochs," which will be published in the "Archæologia Scotica," vol. v., mentions that among the various stone, bone and other relics found in excavating the broch of Craig-Carril in Sutherlandshire, there was found "a concave oval plate of ox-horn, like the bowl of large spoon, 6 inches long, and apparently 4 broad at the middle when entire, with four rivet-holes above end, and two iron rivets *in situ*." Another example apparently of an ancient horn spoon of a larger size.

our Museum, tells me he has seen the whole process gone through, and I hope, at his leisure, he will give us the full details and results of his



(5 inches high.)



(4½ inches high.)

Hand-made Clay-Vessels (Crogans) recently used for Domestic Purposes in the Islands of Lewis and Harris.

inquiries into that, as well as other curious remains of ancient customs, still lingering in some of the isolated and remote borders of our own country.



My object in these remarks has been simply to remind you that you may have rude pottery of any and every age ; and there can be no doubt that fetile vessels, of even the rudest kind, have been actually used for domestic purposes.

With regard to the class of small urns which I have described ; from their various forms, their uses, I have little doubt, may have been also various. They have been generally found in the graves, but sometimes, as the Ronaldshay specimen, probably also in the dwellings of the ancient inhabitants of our country.

Some of these small urns may possibly have been used for lamps, or fire-bearers, filled with burning matter, as we know some of the small stone dishes with handles were so used ; one in the Museum, brought from Faroe by Sir W. C. Trevellyan, was seen by him to be used in this way. The large openings in the sides of some of these vessels might be useful to fan the flame if the vessel was filled with combustible materials. The small pairs of openings so often observed may possibly have been, at least in some instances, for the purpose of attaching a temporary handle, so as to enable it to be more easily carried about ; besides some of these small urns are described as actually having handles attached to them. It has also been supposed that these holes may have been used to attach a lid to the vessel, or it may be to fasten it by pins, or by suspension to a stand, or to the sides of the hut, by means of which it might diffuse a better light through the dwelling. It must be admitted, however, that the peculiar shape of these urns, with the contracted mouths of many of them, do not seem to be very well adapted either for supplying air to a wick, or for diffusing the light of a lamp around them ; though suited apparently for preventing their contents from being easily spilled when the vessel is carried about. The appearance of the urns themselves also does not seem now to bear evidence of their having once been filled with oil or grease, which we might expect to find in a porous clay vessel used as a lamp ; a subsequent exposure to heat would, however, probably remove any stains of this kind. I need not do more than refer here to the well-known fact of the presence of undoubted lamps in the tombs of the Romans and other nations of antiquity ; a fond attempt, doubtless, to give light to their poor occupants through the dark valley of death. If the urns now described were really lamps, they were used,



in some cases at least, for a very different object than as light-bearers in these old British tombs. The ashes of the dead child, once the light and joy of its parents' dwelling, being deposited in the grave, shall we say, with appropriate feeling, in the quenched but much prized and ornamented light-holder or lamp of the household, now darkened indeed by the stroke of death.

Others may have been simply smaller vessels or cups for varied domestic uses, or perhaps also vessels for children, the food vessel of the living child being used, as in Gallo-Roman times, to hold its ashes when dead. Some antiquaries have described these small cup-like urns as somewhat resembling in shape modern earthenware salt-cellar; could it be possible that any of them were used to hold this much valued and necessary condiment, of ancient as well as modern commerce. The small holes pierced through their sides acting as a drain to their contents!

If we suppose from the very close resemblance in character of many of these little urns, that they represent vessels made for some special domestic purpose, it must have been one that required only a very small-sized vessel. The small size of many of them, indeed, seems a reason against the idea of their having been used for lamps; or that they were manufactured solely for the purpose of cinerary urns. The use for which they were originally made, has been one probably often occurring, and of some importance, it may be, to the comfort, or perhaps necessity, of their daily wants; as shown probably by the generally decorated character of the little vessel, and its comparatively frequent occurrence, from one extremity of the country to the other, from the south, reaching north even to the Orkneys.

There is no doubt, from the instance I have described, as well as from the others referred to, that in some cases, at least, these small urns were actually used to contain the ashes of an infant, buried, in all probability, along with the ashes of its mother. I fear, however, we must still wait for further facts and observations before we can definitely say to what other uses, any or all of these vessels, may have been actually applied.

## III.

PRESENT CONDITION OF LINDORES ABBEY. BY ALEXANDER LAING,  
Esq., F.S.A. SCOT., NEWBURGH, FIFE. (PLATE XX.)

My object in addressing the Society at present is to bring under their notice the plan and drawings of Lindores Abbey, executed by Thomas Ross, Esq., architect, Edinburgh, which are now laid before them, and to mention what has been recently done for the preservation of what remains of the buildings of the abbey.

At the time the Chartulary of Lindores was printed by the Abbotsford Club in 1841, the ruins were a shapeless mass; they were so completely hidden under mounds of their own rubbish, that even the most experienced in ecclesiastical structures could with difficulty make out the plan. The author of the "Characteristics of Old Church Architecture" says, in that very interesting work, "nothing beyond one or two broken details of first-pointed character are discoverable among the almost erased walls." The walls were covered with ivy of ancient growth, tending by its luxuriance to bring them down; and the mounds referred to were overgrown with hazel, holly, and other trees, so tangled and thick, that the place, from this cause and its utterly neglected condition, was known in the neighbourhood by no other name than "The Wilderness." This is now all changed. The whole rubbish has been cleared away down to the basement course; the ground has been levelled and laid down in grass, in a manner similar to that which has been so well done to the grounds of St Andrews Cathedral. The ground plan of the buildings is now distinctly seen, and the style of the architecture is apparent even to the uninitiated. For this we are indebted, in the first place, to the late Peter Hay Paterson of Carpow, Esq., the proprietor, who caused the ruins to be enclosed with a wall, and began the clearing out of the rubbish; and latterly to T. Stuart Anderson, occupant of the abbey, and a Fellow of the Society, who has continued the good work with praiseworthy zeal and excellent taste.

The extreme length of the church is 195 feet; the nave measuring 132 feet, and the choir 45 feet. The transepts measure 110 feet from north

to south. The nave had only an aisle on the north side; the north wall of the cloister court forming the south wall of that portion of the church, a peculiarity which is observable in the plans of Hexham, Lanercost, and Bolton. The absence of a pier at the south-east corner of the nave shows that there could not have been a central tower. The aisle was separated from the nave by arches supported on piers of the same design as those exhibited in Mr Ross's drawings, but not a vestige of them remains, and the north wall of the aisle has also been entirely removed; those which have been removed are distinguished by a lighter shade on the plan. The walls of the choir to the height of about 15 feet still stand; it appears to have had two narrow lights on each side, but no vestige *in situ* of the mullions of these or of the great eastern window remains. About 8 feet in height of the walls of the great western tower still stands. Judging from what remains, it appears to have been, both in respect to its position and design, a counterpart of the existing square tower of Brechin cathedral, but far more massive; the buttresses are of much greater width and solidity, and the great thickness of the walls shows that the tower must originally have been of great strength. About twenty years ago, eight or ten steps of a spiral stair leading to the top of the tower were uncovered, but shortly afterwards the most of them were removed. A heavy iron key of antique shape was found at the foot of the stair, but it too has disappeared. In clearing out the interior of the tower about four years ago, Mr Anderson found an iron cannon ball and several of stone; also two iron keys, one large and the other smaller, of antique design: they are now presented to the Society.

Before the lands of the Abbey farm came into the occupation of Mr Anderson, much of the lime rubbish was carted away for the enrichment of the neighbouring fields. In doing this large portions of the building which had long been buried, and had thus escaped the early depredators, were laid bare; among others, the piers of the pillars already referred to as running betwixt the north aisle and the nave; some of them had five or six courses remaining, and were as sharp in outline as the day they left the workman's chisel; their massive strength and the beauty of their clustered shafts must have formed a feature of marked grandeur in the church; but these, and a large portion of an elegant arch of wide span

between the north transept and the small chapel on its east side, were sacrilegiously removed.

The only entire arch remaining, excepting the gateway of an outer court, is the eastern arch of the slype, which formed the entrance to the cloister court from the east, and the main entrance to the Abbey. This arch (which is figured from Mr Ross's drawing, see Plate XX.) having recently shown symptoms of giving way, the Honourable Mrs Paterson of Mugdrum, with a care deserving of commendation, caused the superincumbent rubbish which was weighing it down to be removed, and the arch to be so protected as to secure its preservation. A very accurate photograph of this arch is exhibited and presented to the Society.

When Mr Anderson was proceeding with the work of clearing out the ruins, he noticed, in the south gable of the chapel on the east side of the north transept, alongside of an aumbry, an opening that had been partially built up; on removing the building, he observed two *piscinas* side by side, one of them round and the other fluted, both as sharp and clean as when newly hewn. The mason-work which concealed them was so rude, that it bore no mark of a tradesman's hands, but had the appearance of having been executed for the purpose of concealing the sacred receptacles, evidently to preserve them from profane uses. Both of these *piscinas* are also shown on Mr Ross's plan.<sup>1</sup> (See Plate XX.)

Another *piscina*, concealed by accumulated rubbish, has been discovered in the south end of the transept; it is round, and was not so clean as the two others. Close by it on the same wall a portion of a mural monument has also recently been laid bare; what remains of the arch is of red sandstone, and is of a fluted design. No part of the monument itself remains, unless a fragment of a winged horse, found at its base, be reckoned so.

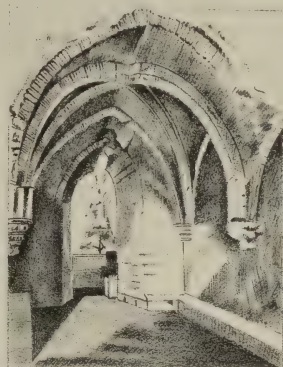
The two small coffins, marked in Mr Ross's plan lying side by side in the choir, are the coffins of two children of David, Earl of Huntingdon, the founder of the abbey. They are hewn out of solid red sandstone: the largest measures  $30\frac{1}{2}$  inches in length, and  $9\frac{1}{4}$  inches at the widest part; and the smallest,  $27\frac{1}{2}$  inches and  $8\frac{1}{2}$  inches. When discovered, infants' bones were found in them. Seven other coffins have been dis-

<sup>1</sup> A photograph showing the position of these *piscinas* in the church is presented to the Society; also a photograph of the remaining arch of the slype, shown in Mr Ross's plan and drawings.





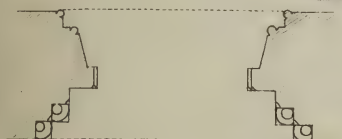
Fiscina at A on Plan.



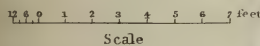
View of Syle



Broken figure lying against West End.



Door at B. on Plan



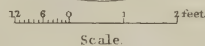
Scale



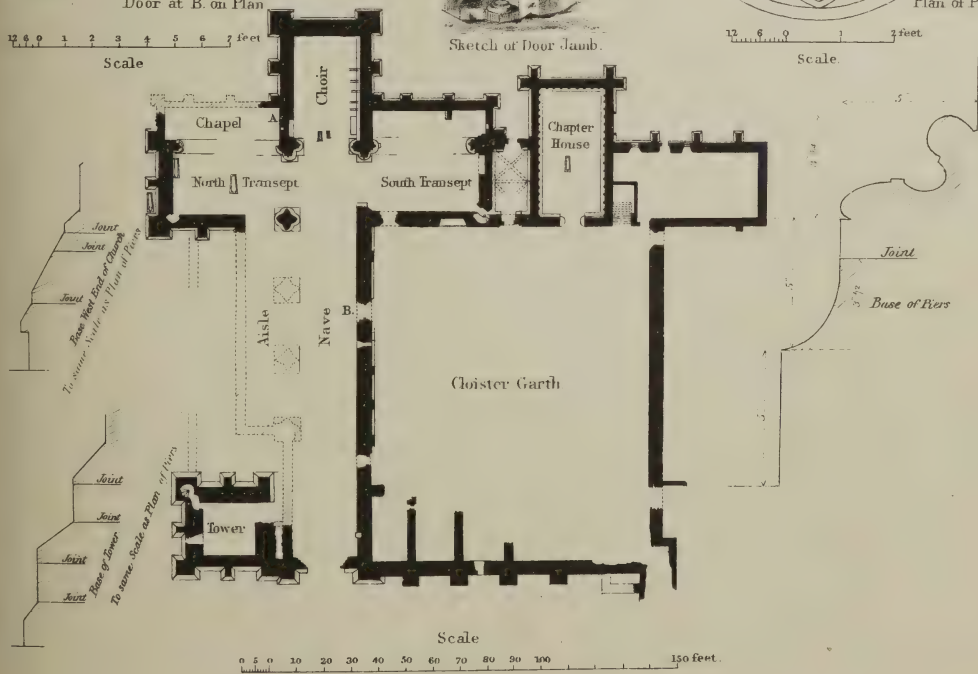
Sketch of Door Jamb.



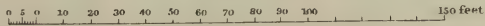
Plan of Piers.



Scale



Scale







covered from time to time, but on none of them was there any inscription to indicate who was buried in them. The most elaborate is the one marked in the plan at the north end of the transept inside; it was the only one exposed before the recent clearances, and for this reason, perhaps, has been popularly assumed to be the coffin of the unfortunate first Duke of Rothesay, who was buried in the abbey.

The broken slab having the figure of an ecclesiastic sculptured in relief upon it (see Plate XX.), is part of the lid of the coffin near the door of the chapter-house.

About thirty-five years ago, a massive signet ring of gold, having a finely cut gem set in it, was discovered among the ruins; it was, if I am not incorrectly informed, retained by the person who found it. He shortly afterwards left for another part of the country, and is since dead, so that in all likelihood the ring has fallen into hands ignorant of its history. A small fragment of a glass chalice has also been found among the rubbish, and is now presented.

Such are the more recent discoveries at Lindores Abbey. The ruins are now carefully protected, and all further devastation stayed. Instead of being an unsightly mass, they are now objects of intelligible contemplation, open to all who take an interest in the relics of the past. But the devastations in our own time, mentioned in this brief narrative, show how necessary it is to keep a watchful eye, if we would preserve even the fragments of the great ecclesiastical structures of a former age.

A photograph of one of "the vastly big pear trees" of the abbey, mentioned by Sir Robert Sibbald in his "History of Fife," published one hundred and sixty years ago, is exhibited. The trunk measures 17 feet 10 inches in circumference, one foot from the ground, and doubtless is of an age anterior to the Reformation. It is believed to be the largest pear tree in Scotland, if not in Britain, and still bears abundant crops.

I have recently had put into my hands, by the kindness of Mr George Wilson, S.S.C., Edinburgh, factor for Edmund Paterson Balfour Hay, Esq., proprietor of the abbey, a rental of the abbey possessions. The manuscript is not dated, but it is signed "Jo. Nicolson," and I am informed by David Laing, Esq., of the Signet Library, to whom the manuscript was submitted, that it must have been drawn up about the year 1580. It is far more minute than any rental of Lindores hitherto known; but as I

hope to have another opportunity of publishing it, I will not trouble the audience with it at this time.

I have only to add, that the thanks of the Society are specially due to the Honourable Mr Paterson and to Mr T. S. Anderson for their care and preservation of the ruins, and also to Mr Ross for making the accurate plan and drawings which have been exhibited.

#### IV.

NOTICE OF EXCAVATIONS IN A BROCH AND ADJACENT TUMULI  
NEAR LEVENWICK, IN THE PARISH OF DUNROSSNESS, ZETLAND.  
By GILBERT GOUDIE, Esq., F.S.A. Scot.

The surface of the Zetland Islands is dotted as closely as perhaps any area of similar extent in the United Kingdom, with remains of prehistoric times. Chief of these are the brochs, and tumuli of various kinds which have repeatedly been brought under the notice of this Society.

Though the brochs are very numerous, and have been the subject of much discussion, only two of them, so far as I am aware, have been systematically explored—that in the Loch of Clickimin, near Lerwick, and the better known Castle of Mousa, the Mósey jarborg of the Sagas. Within a few miles distance of the latter, on a desolate rocky sea-cliff, near Levenwick, in the parish of Dunrossness, is situated another broch. Sir Robert Sibbald, in his survey of the islands, published in 1711, mentions *two* brochs in this place. His words are,—“South and south-west from Leven Week (a large mile distant), lie the ruins of two forts, built by the Picts, upon a rock, close by the sea.”

A large area adjacent is covered by a *debris* of broken stones of great size, strewn irregularly as if by the action of the sea, but the remains of only one distinct building can now be traced. It does not appear to have been noticed in any published account I have seen since the time of Sibbald, but it was visited in 1855 by Sir Henry Dryden, who has favoured me with a copy of his sketch of the ruin as it then appeared—a mere mound—and a ground plan shewing the tower and adjacent tumuli. (Both now submitted.) His measurements, though taken under disadvantages, agree closely with my own (see the annexed woodcut).

The appearance formerly presented by this broch was that of a mass of building material, 10 or 12 feet in height at the highest point, the course of the main circular wall being, however, distinctly discernible, especially on the north side, where a portion of the outside face was exposed. The wall, as shewn at this point, is of very solid masonry, composed of large stones, of nearly uniform size, seemingly unhewn, but built with great regularity, and without any trace of lime or cement. Around are remains, seeming, at first sight, to be massive circumvallations, not very clearly defined, and traces of those rude buildings, partly beneath the surface level, which are commonly attached to these northern brochs.

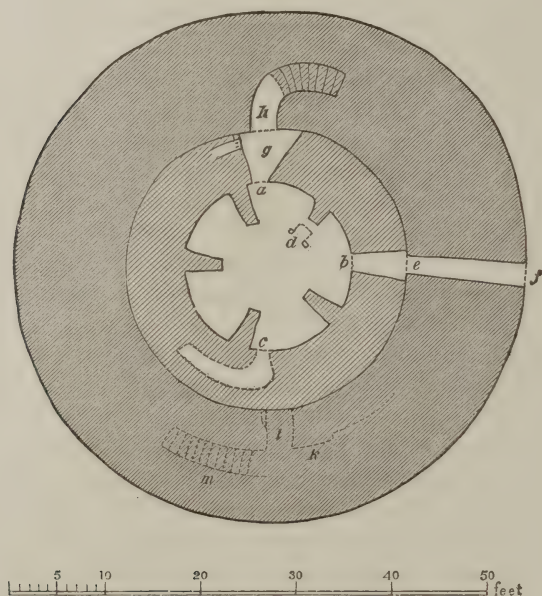
My attention had been directed to this ruin many years previously, but it was only during a short residence in the neighbourhood, in the summer of 1869, that I had an opportunity of attempting its exploration. Fortunately, the undertaking presented no serious difficulty. My object, in the first place, was merely to lay open the interior of the circle, by removing the mass of fallen stones which filled it. After a few days' labour, a large portion of the debris had been removed, and about three-fourths of the interior laid bare to the foundation, bringing to light the curious internal arrangements of the structure in a state of almost perfect preservation, except in so far as damaged, at the moment of demolition, by the sudden fall of material, and since then by the superincumbent pressure.

The accompanying ground plan shows the position of these internal arrangements, consisting of a second wall or "scarcement," about six feet in breadth, and on an average, of the same height, so far as entire, lining the interior of the main wall, and from it, five walls, at irregular distances apart, projecting towards the centre of the area. The length of these walls varies from  $2\frac{1}{2}$  to  $4\frac{1}{2}$  feet, leaving a clear central space, from 10 to 12 feet in diameter, between their opposite faces. On the north-east side of this space, three slabs set on edge, formed the back and two sides of what appeared to have been a fire-place (*d* in plan), with remains of ashes, or of soft dust-like sand. A portion of a quern was found among the debris, and fragments of bones, but no other remains.

It will be observed, that while these internal walls are of the same general character as in similar buildings elsewhere, they are here more regular, more systematic in design, and in better preservation than



perhaps in any other broch that has been explored. The approach to uniformity, particularly in breadth, and also in apparent height, of the scarcement or inner wall, is also noteworthy. In most other brochs it is either narrower, or of irregular breadth. At intervals, between the projecting walls, it is pierced by openings (three in number), showing the commencement of well built passages (*a, b, c*, in plan). It was impossible



Ground Plan of Broch of Levenwick, Mainland, Shetland.

at the time, to trace these passages to any distance inward, but there seems little doubt that they lead to small chambers, or store holes, and possibly also may communicate with other and larger chambers within the main walls, or with the upper galleries, which have now disappeared.

The main wall of the tower, as already indicated, describes a circle,

though not a perfect one. It is, as usual, a double wall, varying in combined breadth, from 12 to 16 feet, and has been intersected by a staircase, the lower portions of which will probably be brought to light by further excavation. Some years ago, a few steps of it were discernible on the top of the wall, on the south-west side, but these have now nearly disappeared.

The internal diameter of the building measures  $29\frac{1}{2}$  to 30 feet (according to Sir Henry Dryden, 28 $\frac{1}{2}$ ), the eccentricity of the wall being on the outside, which bulges out to its greatest breadth (16 feet) on the north-east, where it probably encloses a chamber or chambers of considerable dimensions. The highest point of the wall standing measures about 15 feet from the foundation within.

The main entrance from the *outside* is not yet ascertained, but there is an opening to the *interior* on the south side (1), near the level of the surface of the inner circular wall and projections already described. This cannot, however, be the original entrance from without, as it is 6 or 8 feet above the level of the floor.

It may be a question whether or not these internal structures, above described, are of equal date with the main building. They are certainly of less solid masonry, but, on any supposition that we can form as to their use, would imply no necessity for such massiveness as characterises the main walls.

Adjacent to the broch are three or more long mounds, known by the common name of "The Giants' Graves." I had early wished to have these mounds opened, as much for the sake of the light they might possibly throw on the people who constructed the adjoining tower (assuming a possible connection from their juxtaposition), as for the interest of the mounds themselves. I revisited the spot in the summer of 1870, and endeavoured to make the beginning of an excavation, commencing with the mound nearest to the broch towards the south-west, which was both higher and longer than its neighbour further south; we started an opening on the north side, about 20 feet from the eastern extremity, and finding nothing, began a similar digging on the opposite or south side. The digging shewed the mound to be covered with earth to a depth of 6 or 8 inches, underneath being, first, a bed of small stones, apparently not burnt, about a foot in depth, and second, a layer of clay,

carefully prepared, about 6 inches thick. These successive layers were no sooner passed than the end of a stone wall, crossing the tumulus, appeared. The earth on both sides being carefully removed, a well-built wall, faced on both sides, was exposed. It measured about  $6\frac{1}{2}$  feet in length by about equal height in the centre, its highest point, and 18 inches or so in thickness.

Further digging made it evident that further erections proceeded from this point towards the east, as in the case of the Cairns in Caithness, explored by Mr Anderson, and described in the Proceedings of this Society, vol. vii. part 2. A portion of a very rude wall was followed to the distance of a few feet in that direction, no trace of sepulture, or of any animal or manufactured remains being however discovered. I was under the necessity of closing up the digging at this point, reserving further excavation to a future time.

I have pointed out in the above, the facts connected with the partial excavation of what I believe to be very interesting remains of prehistoric antiquity. It would be very desirable that a more thorough exploration were made, so as to ascertain the precise character of the remains, and to do what may be necessary for their preservation. I purpose, on my next visit, to endeavour to have this done, when I hope to be able to report some interesting and satisfactory results.

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*Supplementary Notice.*

I have the satisfaction to report, by way of supplement to the preceding Notice, that in July 1871, I resumed work at the broch near Levenwick, the opening of which has been described; and the result is such that the general character and construction of the building may now be determined.

After clearing away the heavier portion of the debris which remained within, after the former excavations, it appeared to be first in point of importance to ascertain the entrance, which I imagined, from the analogy of some other brochs, would be on the east side. As mentioned in my former communication, the openings of three passages were exposed in the interior area, one on the south, the others on the north and east sides respectively. By the gradual removal of the debris which blocked up the last of these (*b*), the passage was traced eastward, first, through the inner wall or

"scarcement," and then through the main wall, to its opening on the outside of the building (*b, e, f*). The loose condition of the ruin in this quarter, consisting to a large extent of material previously displaced from other portions of the excavations, made the work one of considerable difficulty, and prevented so thorough a clearance at the time as was desirable, but the result, as it is, is important, inasmuch as the original entrance to the building was now ascertained and laid open.

Two of the lintels of the passage remain *in situ*, one over the opening (*b*) in the interior area in the exposed face of the "scarcement," the other on the inner edge (*e*) of the main wall. The rest of the passage is uncovered, and the sides gradually diminish in height as they approach the outer edge of the circle (*f*), where little more than the mere foundations remain, the building having suffered great dilapidation at this point. The length of the passage, through the main wall and scarcement, is together about 19 or 20 feet. Its width at the opening in the inside of the main wall (*e*) is about 3 feet, and where it opens to the interior area (*b*) in the scarcement, only about 2 feet. The precise level of the floor at either point is difficult to determine, and hence the heights of the openings are not given.

The entrance having been ascertained, it was evident that the two remaining openings in the interior area above referred to, must lead either to the staircase communicating with the upper portions of the tower, or to chambers within the wall. The opening (*a*) on the north side was set to, and its course excavated, through the "scarcement," where it widened into a large triangular space (*g*) in front of a doorway in the main wall,  $5\frac{1}{2}$  feet high, and nearly 3 feet wide, covered with a heavy lintel stone. This doorway was found to have been carefully built up, and the removal of this obstruction, and the clearing of the opening beyond it, was attended with much difficulty and danger, from the dilapidated state of the building. The excavation was however proceeded with, and the opening proved eventually to be the entrance to the staircase (*h*), which, after the main entrance, was the next point of importance to be ascertained. The stair itself was followed until daylight appeared above, when operations ceased in that direction, and the building was carefully covered in. The width of the staircase is at first about 3 feet, from which it slightly diminishes. It is roofed in the usual way, by overlapping stones.



The building being so ruinous, the further tracing of the stair was impossible at this point, and for some distance further. But the result of a careful examination served to show that the stair as explored, proceeds upwards to a height from the floor of 8 or 10 feet, where it halts, and is continued by a level gallery along the heart of the building towards the south, where it terminates (*h*) on the east side of an open space between the walls, where a large window (*l*) opens to the interior. On the west side of this space (*m*), the stair again starts for the next gallery above, and 15 steps of it at this point have been laid bare.

I thus succeeded in ascertaining the entrance to the broch, and also, as I think, the true theory of its construction, which, while resembling that of Mousa, is somewhat different, inasmuch as the stair would appear to be not a continuously ascending one, but to lead first to one stage, and then to be continued by a gallery proceeding around on a level to a distance of about one half the circle, when it again ascends to a second, and probably similar gallery, and so on.

One other opening in the interior area, on the south side (*c*), has been partially cleared, but remains to be properly explored. As it is neither the entrance from without, nor the opening to the staircase, it probably leads to an isolated chamber or chambers within the great wall.

A quantity of animal bones and of decayed vegetable fibre was found, also a carefully worked stone, somewhat resembling a plummet, with a hole drilled in the one end.

As regards the outside of the building, a considerable quantity of the debris attached to and covering it was removed; but a good deal of labour will still be required satisfactorily to clear it away and excavate around it, including the rambling hut-like structures which remain on the west side, and the adjacent mounds which were referred to in the original notice. It is probable that these excavations might prove the most interesting part of the work.

*Note.*—The vegetable remains above mentioned were submitted by Dr John Alex. Smith to John Sadler, Esq., Botanical Demonstrator, Royal Botanic Gardens, from whom the following communication has been received:—

“On examination, I find that the vegetable remains found in excavating the ruins of the Pictish Tower or Broch of Levenwick, in Shetland,



consist of two kinds of partially decayed timber. 1st, The light-coloured pieces are those of a species of pine. Under the microscope the characteristic discs on the woody tubes are distinctly seen in single rows along with large medullary rays. From the appearance of the whole structure, I have no hesitation in saying that the fragments belong to our Scots fir (*Pinus sylvestris*). 2d, The darker and more numerous pieces are evidently those of some hard-wooded tree, such as the alder or elm. The wood is not porous enough for oak, being deficient in dotted vessels or ducts."

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MONDAY, 8th May 1871.

DAVID MILNE HOME, LL.D., Vice-President, in the Chair.

The following Gentlemen were balloted for, and admitted Fellows of the Society :—

SIR JOHN F. CLARK, Bart., of Tillypronie, Aberdeenshire.

JAMES W. BAILLIE of Culterallers, Esq., W.S.

JOHN HUTCHISON, Esq., R.S.A.

ARCHIBALD A. WATT of Denniston, Esq., Dundee.

ANDREW HEITON, Esq., Architect, Perth.

And as a Corresponding Member :—

Rev. JAMES RUSSELL, Walls, Shetland.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors :—

(1.) By WILLIAM RALSTON PATRICK of Trearne, Esq., through R. W. COCHRANE PATRICK, Esq., B.A., LL.B., F.S.A. Scot.

A Collection of Human Bones from the chamber of a long cairn, on the Cuff Hill, near Beith, Ayrshire. (See subsequent communication by Mr R. W. Cochrane Patrick.)

(2.) By Miss GORDON, Manar, Aberdeenshire.

A Flat Stone, somewhat irregularly shaped,  $3\frac{1}{2}$  inches square, and an inch in thickness, having in the centre of its opposite flat sides a circular hollow, picked out,  $1\frac{1}{2}$  inch in diameter, and a quarter of an inch in depth. The stone is porphyritic, and seems waterworn on two sides, and artificially broken on the others. It was found in a field near an underground house or weem at Kildrummy, Aberdeenshire.

(3.) By Mr JOHN ANDERSON, Dalhousie Grange, Lasswade.

A Facsimile of Gordon of Rothiemay's Bird's-eye View of Edinburgh, 1647, engraved by Kirkwood. Mounted on cloth, with rollers.

(4.) By GEORGE CORSANE CUNNINGHAME, Esq., F.S.A. Scot.

Five small Etruscan Vases:—Lecythus of red ware, 5 inches high, with three leaf-shaped ornaments in a black glaze on the front.

Lecythus of brown ware, with black glaze, 3 inches high.

Oenochoe of brown ware, with black glaze,  $2\frac{1}{2}$  inches high, the handle rising  $1\frac{1}{4}$  inch above the orifice.

Oenochoe of brown ware,  $2\frac{1}{4}$  inches high, painted with alternate bands of black stripes. The handle rises over the triangular lip about half an inch.

Oenochoe of brown ware,  $1\frac{3}{4}$  inches in height, painted black, ribbed perpendicularly on the globular part, and having a scroll bordering underneath the lip, which is trifoliate.

(5.) By JOHN JEFFREY, Esq., Banker, Dunbar.

Stone Bullet of quartzose sandstone,  $3\frac{1}{2}$  inches diameter, found in the roots of a tree, 5 feet underground, at Broxmouth Ward, Haddingtonshire.

Specimens of Bones of the common domestic animals, Glazed Pottery, and unwrought Flints from a kitchen midden near the old castle at Dunbar.

(6.) By ALEXANDER MACLEAN, Esq., of Ardgour.

Oval Wooden Vessel, of a single piece, 6 inches long,  $2\frac{1}{2}$  inches wide, and the same in depth, having the remains of a looped handle at one end, found with the fragments of several others, smaller and larger, up to 10 inches in length, by 6 inches wide, and 5 inches deep, in a moss near

Ardgour House, Inverness-shire. The wooden vessel had been mended with two bronze clasps secured by small rivets.

(7.) By THOMAS S. ANDERSON, Esq., F.S.A. Scot.

Two Iron Keys, one 8 inches long, with Ornamental Bow, the other 3 inches long, found in Lindores Abbey, Fife.

Portion of the Rim of a Vessel of Thin Glass, ornamented with enamelled parallel bands, found in Lindores Abbey.

(8.) By Miss ANN DUNDAS, 24 Broughton Place, through JAMES DRUMMOND, Esq., R.S.A., F.S.A. Scot.

A MS. Volume, relating to Teinds (1627), and other MS. Collections.

(9.) By Major-General LEFROY, R.A.

Photograph of a Bronze Ornament, of Scandinavian origin, bearing a Runic Inscription, found at Greenmouth Castle, County Louth, in 1870.

(10.) By Sir W. C. TREVELYAN, Bart., F.S.A. Scot.

Photograph of a British Sepulchral Pillar of Sandstone, and of Dragon's Heads in Portland Stone, part of the City of London Arms from Aldersgate, now at Wallington.

(11.) By the COMMITTEE OF MANAGEMENT OF THE ABERDEEN ARCHAEOLOGICAL EXHIBITION, through CHARLES E. DALRYMPLE, Esq., F.S.A. Scot.

Collection of 63 Negatives (by Mr Wilson, Aberdeen), from a Selection of Portraits shown at the Archæological Exhibition held at Aberdeen in 1859, on the occasion of the meeting of the British Association there. This Donation was accompanied by the following letter addressed to John Stuart, LL.D., Secretary :—

KINELLAR LODGE, ABERDEENSHIRE,  
March 10, 1871.

DEAR SIR,—I beg to inform you that some time ago the surviving members of the Committee of Management of the Archæological Exhibition held in Aberdeen in 1859, on the occasion of the British Association meeting there,—resolved, that the *Negatives* which, you are aware, were

taken by Mr Wilson of Aberdeen, from a selection of the portraits shown in the Exhibition, should be presented to the Society of Antiquaries of Scotland, to be preserved in their Museum, and be accessible to the public under such regulations as the Society might see fit to make. I therefore now beg to inform you, further, that arrangements have been made for sending the negatives to Edinburgh, where I hope they will safely arrive, and form an addition to the Museum of some interest. The Committee feel that *there* is their most fitting resting-place.—I am, &c.,

CHARLES ELPH. DALRYMPLE,  
*Late Chairman of Committee of Management, Aberdeen  
Exhibition of Archaeology.*

(12.) By JAMES TAYLOR, Esq., F.S.A. Scot.

The Holy Bible (with the Apocrypha). Edinburgh : Printed by James Watson, 1722. Folio.

(13.) By the Right Hon. the MASTER OF THE ROLLS.

Calendar of Treasury Papers, 1697–1701–2.

Descriptive Catalogue of Materials relating to the History of Great Britain and Ireland. By Sir Thomas Duffus Hardy, D.C.L. Vol. iii. A.D. 1200–1327.

(14.) By the GRAMPIAN CLUB, through Rev. CHARLES ROGERS, LL.D., F.S.A. Scot., their Secretary.

The Jacobite Lairds of Gask. By T. L. Kington Oliphant (Grampian Club). 1870. 8vo.

(15.) By the SCIENCE AND ART DEPARTMENT, South Kensington.

Catalogue of Anglo-Saxon and other Antiquities discovered at Faversham, Kent. By C. Roach Smith, F.S.A., &c. 1871. 8vo.

(16.) By MORRIS CHARLES JONES, Esq., F.S.A. Scot., the Author.

The Abbey of Ystrad Marchell (Strata Marcella) or Pola. 8vo. pp. 34.

(17.) By the SOCIETY OF ANTIQUARIES OF BONN.

Jahrbücher des Vereins von Alterthumsfreunden um Rheinlande. Heft xlix. Der Grabfund von Wald Algesheim. Bonn, 1870. 8vo.



(18.) By the UNIVERSITY OF KEIL.

Schriften der Universiten zu Keil. 1855-1869 inclusive.

The following Communications were read :—

## I.

EDINBURGH IN EARLY TIMES: WITH ILLUSTRATIONS. BY DAVID LAING, ESQ., SECRETARY FOR FOREIGN CORRESPONDENCE. (THE PREFATORY NOTICES CONTINUED. THE EARLY VIEWS, BOTH NORTH AND SOUTH, OF THE CITY.)

This paper was illustrated by a number of early views of the City of Edinburgh, among which there was exhibited, by permission of the Right Hon. the Lord Clerk Register, a photograph (intended for the "National MSS. of Scotland") from the rare engraved view by Hollar, dated 1670, preserved in Her Majesty's Library at Windsor. Permission has been given to the Society by the Lord Clerk Register to use this view of Hollar's, and photo-zincographed copies have been obtained from the Ordnance Survey Office for that purpose. These, with a facsimile of Gordon of Rothiemay's View, in 1647, &c., will be given as illustrations in the "Archæologia Scotica," vol. v., which is now in progress.

## II.

NOTE OF THE OPENING OF A GROUP OF CISTS NEAR LAUDER.

BY THE RIGHT HON. LORD ROSEHILL, F.S.A. Scot.

The Lady John Scott, a Lady Associate of this Society, first heard of the discovery of this ancient burial-place, and asked me to accompany her in examining it.

Altogether we had three days' work at the spot at different times; and in a few words I will try to give a general idea of the result.

The chief interest, in my mind, is the curious resemblance of this group of stone cists to another group of fifty-one cists, discovered and examined in 1864 by Mr Hutchison, of Carlowrie, near the "Cat-Stane," at Kirkliston. (See Proceedings, vol. vi. p. 186.)

Mr Hutchison in his paper, read the 10th April 1865, suggests a con-

nection between this group of cists and the Cat-stane; and the late Sir James Simpson, in a paper read February 11, 1861, gives a Saxon origin to the stone, and attempts to identify it as the tombstone of the grandfather of Hengist and Horsa. (See Proceedings, vol. iv. p. 119.)

With the one exception, that the cists I am describing did *not* lie in regular rows, the rest of the description of the Cat-stane cists, both as to formation, contents, and general position, might apply word for word to them.

The group under consideration are on the Addinstone farm, about three miles from Lauder. Here a tongue of land stretches down from the hills, between the Leader River and the Long Croft Burn, on the eastern slope of which, a few hundred yards above the junction of the two streams, a slight rise above the general level of the field may be observed from below, having the general outline of a circle, enclosing about an acre of ground. Within this space the plough had frequently turned up flat slabs of freestone; and our three days' examination proved that nearly the whole mound, especially the highest part of it, was more or less thickly studded with cists. In all, we opened about twenty, besides several which had been partly broken up by the plough; and doubtless many more still remain undiscovered, the irregularity of their position (sometimes singly, and sometimes in clusters of three and four together) making their discovery, when working against time over a large space of ground, somewhat a matter of chance. The relative position and arrangement of the cists will be seen from the annexed ground plan.

As a rule the cists were long, viz., from 2 feet 6 inches (for a child) to 6 feet 6 inches (for adults). These were well made with rude, unhewn slabs of freestone or whinstone, the sides being usually made of from three to five slabs each; the head and foot, of one or two each; and the lid, of two to four, the gaps between being filled in with smaller stones, when necessary. The floor or bottom stone was often a single slab; or, if composed of several slabs, they were always very neatly and carefully put together, so as to form a compact and level bed for the corpse.

In these "long cists" the bodies were, with two or three exceptions, lying at full length on their backs, with the feet towards the east,—the exceptions being, one lying with feet towards the west, one flat on his face, and one or two on their sides. The cists were closely packed with

gravel and earth, so much so, that when the side slabs and covering stones were removed, the interior formed a mould, which might almost have been lifted in one piece without breaking. Even the skulls were filled with gravel, some of the stones of which were so large, that it is difficult to imagine how they got in, since I had considerable difficulty in getting them out again.



Ground Plan of Cists at Lauder.

No works of art, urns, or weapons of any kind were found in or near any of the cists; and my first idea was that of an ancient Christian burial-place, but after finding signs of burning in every cist, and in many even of the long-cist type a distinct layer of charcoal on the bottom flag under the body, I became doubtful, and finally gave up Christianity altogether on discovering not only several short cists, with bodies in the usual contracted position, but also two or three undoubted cases of incineration, in which the bodies had been consumed by fire, and heaps of stones piled

over the remains into a cairn. The particulars and measurements of all these I can give with sketches and full details, should they be thought of any importance; and perhaps this curious grouping together of all the three typical forms of burial—long, contracted, and by burning—may be of some interest, although nothing was found associated with the bodies, except in three cases, where I found as the only *foreign* objects within the cist, the single tooth of a horse or ox, generally placed on the breast.

From the uniform level of the lids and bottoms of the cists, besides the great resemblance in their form and make, I should be inclined to think that the interments were all made within a short time of each other, although they contain the remains of all ages, from that of a child to that of a man of sixty or more.

In No. 1 cist (see woodcut), was a child by itself of from five to eight years old; in No. 3, a young woman on her back, with knees drawn up, and the body of a child resting on her breast.

In No. 2, was a young person in the act of shedding his first teeth;—skull produced; this body was unburnt, though resting on a layer of charcoal, and was in a contracted position on his right side, knees tucked up to his chin, and right hand under his head. The cist was 2 feet 4 inches by 1 foot 8 inches; was made of smaller stones than the rest, and had two covering stones, and one flag-stone at bottom.

A curious circumstance was noticed in No. 3, where the body of a powerful man of about sixty years of age was discovered on his back—(lower jaw exhibited)—with every bone of his body in its proper place except both heel-bones, which were detached, and found high up between the thigh-bones.

No. 4 was divided in a slanting direction by thin flat slabs into an upper and lower grave; in the upper part a few small bones seemed to indicate the burial of a child; whilst the lower half contained only a huge thigh bone, and all the bones of one arm, these, however, pointing to the west, instead of to the east, as in most of the other cases.

No. 5 was a large and beautifully made cist, 6 feet 4 inches long by 2 feet 1 inch broad; sides made of two slabs each, head and foot of one slab, and floor and lid of three slabs each. Inside, a male skeleton, lying feet to the east, on his back—the skull shows perfect teeth, and wisdom teeth just rising.



No. 6 was a very long, narrow cist, in which the body, probably that of a female, was lying face downwards, feet to the east.

No. 7, the most perfect cist of the series, was  $6\frac{1}{2}$  feet long, by 2 feet broad at the head, and 1 foot 8 inches at the feet, and 12 inches deep inside. The top was formed of one large slab over the head and shoulders, and four or five smaller ones below. The skeleton inside was that of a middle-aged man, with very large bones, lying on his back, with feet to the east, and with nearly every bone in his body perfect. The body was unburnt, though a layer of charcoal lay between it and the bottom flag. The skull (produced) is nearly perfect, with the exception of part of the temporal bone on each side, including the "zygomatic process;" and also parts of the "ethmoid bone." The lower jaw was perfect, but has been unfortunately lost. The skull may, I believe, be considered "Dolichocephalic;" the occipital bone bulges out to a very remarkable extent, as in the so called Sion type. Frontal sinuses very well marked; and teeth, except wisdom teeth, worn nearly flat. Circumference of skull,  $21\frac{1}{2}$  inches; from ear to ear,  $12\frac{1}{2}$  inches; from root of nose (glabellum) to occipital spine,  $12\frac{3}{4}$  inches.

The cairn, No. 2, is also curious, as it consisted of a heap of burnt stones 2 feet high surrounded by a great deal of charcoal, in and under which were many burnt human bones, besides those of some animals. Several other heaps of this kind were found which are not marked on the plan. The cists shaded in the plan had been more or less turned up by the plough, and the contents scattered.

### III.

THE ECCLESIASTICAL ANTIQUITIES OF THE DISTRICT OF KINTYRE  
IN ARGYLLSHIRE. BY CAPT. T. P. WHITE, R.E., F.S.A. SCOT. (OF THE  
ORDNANCE SURVEY).

[As this elaborate paper, which was illustrated by upwards of a hundred drawings and sketches of the sculptured slabs and other early ecclesiastical remains of the Kintyre district, is intended to be published by the author in a separate form, we give merely a bare abstract of the descriptive portion of the paper, in which the dedications of the various sites, with a

brief account of their patron saints, and sketches of the parochial history, &c., were given.—Eds.]

*Parish of Southend.*—In this parish, which comprises the two ancient parishes of Kilcolmkill and Kilblane, there are the remains of one of the old parochial churches (Kil-Colmkill) and six chapels, viz., Kilchattan, St Ninian's, St Coivin's, St Catherine's, Katti Kil, and another which is nameless. The following other ecclesiastical sites are indicated by the local names,—viz., Kilbride, Kil-mashanachan, Kil-Irvan, Kil-Calmanell, and Kildavie. The church of Kil-Colmkill is situated in a retired spot on the southern shore of the parish. Caves in the face of the conglomerate precipice overhanging the cemetery are pointed out as having sheltered St Columba during a sojourn here. A spring bubbling from the rock is called the Priests' Well.

In the churchyard there are five mediæval slabs, drawings of which are exhibited. Remains of an ancient cross are also spoken of, but no remnants of it are now visible.

The island of Sanda belongs to the parish of Southend. On it are the remains of St Ninian's Chapel, of the general appearance of which and of some of its architectural details drawings are exhibited. At Kilmo-senchain there are two crosses, nearly seven feet high, one of which is very similar in shape and pattern to the monolith at Applecross in Ross-shire, only much more ornate. The other is unsculptured. Both are represented in the drawings exhibited.

At St Coivin's Chapel, a little to the eastward of Dunaverty, the foundations alone remain to show the site, and one small fragment of a sculptured stone was observed.

*Parish of Campbeltown.*—This parish contains three chapels, identifiable by their ruined walls, and four more are suggested by local names. There is also another dedicatory Saint's name in Davar island. Of the four parochial divisions, Kilkerran occupied the south-east corner. Traces of the walls are still visible. The churchyard contains fragments of two sculptured crosses, besides two entire slabs, and the remains of another, of all which drawings were exhibited. The perfect cross erected in the centre of the town of Campbeltown (a cast of which is in the Museum), and which is assigned to the first year of the 16th century, seems to have been brought from this place.

The cave traditionally said to have been the cell of St Kieran is about three miles from Kilkerran, at Achinhoan Head. The remains of a substantially built wall, three feet in thickness, still bar its entrance. On the left hand side of the entrance is a flat roundish stone, on which is carved a circular figure, with inscribed hexafoil, having its cusps connected by arcs, and surrounded by a cable border, arranged in a sort of Greek pattern of square folds. Near this stone is a small fragment of another, traced over with lines. Besides these, there is a basin, nearly oval in shape, neatly scooped out of a block 2 feet long, by  $1\frac{1}{2}$  feet in width. It lies exactly under a drip of water from the roof of the cave, which always keeps the little font full.

Davar, or St Barr's Island, which lies across the entrance to the Bay of Campbeltown, has also a number of caves on the seaward side.

At Kilchouslan, on the north side of the Bay of Campbeltown, are the ruins of the former church. It was originally dedicated to St Constantine. The burial-ground is still in use. It contains the fragment of a beautifully sculptured cross; and a circular stone, like a quern stone, with a round hole in the centre large enough to pass the hand through, which has a curious tradition attached to it. If a man and woman eloped, and could reach the churchyard in time to join hands through the hole in the stone before they were overtaken, they were held to be safe from the pursuit of kith and kin.

Kilkevin, or St Coivin's Church, about  $4\frac{1}{2}$  miles to the west of Campbeltown, is in tolerable preservation. There are six sculptured slabs within the area of the church. A little to the south of the church is a small hill, called Cnocan-a-chluig, or the Hill of the Bell.

The Church of Kilmichael has been completely destroyed; the foundations and a few fragments of what were once tombstones being all that remain to indicate the site.

The foundations of three of the subsidiary chapels can yet be traced on the ground. They are grouped pretty near each other at the south end of the parish, and were probably dependencies of Kilkerran. The one furthest south is Kilellan, the foundations of which only remain; the second is Kilchrist; and the third Killeonan, dedicated to St Adamnan.

Three "Kils," now existing only as prefixes in the names of farms, may

indicate ancient ecclesiastical sites. They are Kilkeddan, Kilwhipnach, and Kildalloig.

*Parish of Killean and Kilchenzie.*—The old church of Kilchenzie is between four and five miles from the town of Campbeltown. Of the eight sculptured slabs here, four are in a very perfect condition. On one of them, the shears accompanies the sword, with this inscription, HIC : IACET : KATERINA : F(I)LIA : NEIL. Besides these, there is another fragment, with a rude form of wheel cross, brought out by means of a broadish band or beading in relief.

On the north side of Glen Barr there are traces of an ancient burial-ground on the farm of Kilmaluag. In the garden fence of the farm-house a slab was found, with an ornamental cross carved on it in relief.

The churchyard of Killean contains eleven mediæval slabs, and two more were discovered in a mutilated condition, paving the doorway of the church.

*Parish of Kilcalmonell and Kilberry.*—The modern churchyard at Clachan contains some rude slab carvings of a curious and distinctive type, as well as several of the more ornate and later kind. In the grounds of Ballinakill House there is a curious conical mound, on the summit of which is an upright slab, with a fragmentary cross sculptured upon it. The mound is sepulchral, and several urns were taken out of it some years ago.

There are several dependent chapelries of Kilcalmonell, which can be identified, viz., St Bride's, Kilmichael, where there is a rude cross slab, and Kilchamaig.

*Parish of Saddell and Skipness.*—Within the limits of this parish only three ecclesiastical sites have been identified. Between Saddell and Skipness there are no traces of any ecclesiastical site, except the burying-ground of Claonaig. The chapel of Kilbrannan (also called St Columbus), stands near the extremity of the point of Skipness. It is in a better state of preservation than any of the other Kintyre churches. Five sculptured slabs were sketched here.

In conclusion, Capt. White intimated his intention of dealing in his next paper with the prehistoric remains of the district, which are even more numerous and less known than the ecclesiastical.



## IV.

NOTICE OF A LONG CAIRN, ENCLOSING TWO PARALLEL ROWS OF CISTS, ON THE CUFF HILL, NEAR BEITH, AYRSHIRE; WITH NOTES BY DR SPEIRS, OF BEITH, ON THE HUMAN REMAINS FOUND IN IT, AND NOW PRESENTED TO THE MUSEUM. BY R. W. COCHRANE PATRICK, OF LADYLAND, ESQ., B.A., LL.B., F.S.A. SCOT.

The cairn in which the bones now exhibited were discovered is situated at the base of a rocky slope, on the south-east side of the Cuff Hill, near Beith. It seems to have been originally about 150 feet in length, by 57 (or thereby) in breadth, and about 10 feet high, though now considerably reduced in size. It is composed mainly of stones, generally of no great size, and similar to those which have fallen from the face of the hill not very far from it. There is very little to distinguish it from the natural rocky mounds which surround it; and it was not till 1810, when some workmen were employed to excavate, with the view of procuring some road metal, that it was discovered to be an ancient place of burial. Several graves appear to have been then opened, but no accurate account has been preserved of what was discovered. It is stated that some human and other bones,<sup>1</sup> a bead of clay, and a piece of defaced metal, were amongst the objects then brought to light, but no trace of them can now be found. The cairn was immediately afterwards carefully fenced round; and no further excavation was made till the end of 1863 (or early part of 1864), when a grave at the north-east end of the tumulus was opened, in which the bones now presented were found.

From a careful examination of what remains of the cairn, it would appear that the cists were in two parallel lines throughout the entire length, with a passage between the rows about 7 feet in width. Each grave is composed of slabs forming the sides and ends. These slabs are of great size—one, forming part of the cover of one of the graves opened in 1810, measures 6 feet in length, by 4 feet 2 inches in breadth, with an average thickness of about 1 foot.

The cairn lies almost north and south, and the graves are at right angles to the central passage. The one last opened, in which these bones

<sup>1</sup> Robertson's *Cunninghame*, p. 293; Paterson's *Ayrshire*, vol. i. p. 263.

were found, differs from the others in one curious particular. The slabs which compose it are like the earlier ones, of great size (one of them being 8 feet 1 inch in length), but are of limestone, while the others are the same stone as that of which the cairn is made (a sort of whinstone). This limestone is not found nearer than a mile and a half from the spot where the graves are. When opened, it was found that the covering slabs were broken in by the great weight of stones above, but in other respects the grave was perfect. It measures inside 7 feet 6 inches in length, by 3 feet 8 inches at the west end, and declining gradually to 2 feet at the other. The average depth is about 3 feet 5 inches. There is an outer passage leading in from the east side about 7 feet in length, with an average width of 2 feet to 18 inches, and about 2 feet 6 inches in depth. In this passage some dark earth was found, but all the bones were inside the grave. Many of them crumbled into dust almost as soon as they were discovered; and though a most careful search was made, no other object was found.

The following note on the principal fragments was made at the time by Dr Speirs of Beith:—

“The bones are human. (a) There is a lower jaw-bone, containing eleven teeth, one of them, a molar, appearing to have been the seat of toothache. The front teeth are in a good state of preservation; and from the enamel being very much worn, and the teeth flattened, the person must have been fifty years of age at least.

“(β) A right humerus, the head of the bone wanting, the ulna and radius of the forearm of the same side adapted themselves to the condyloid surfaces of the humerus. In the upper portion of the radius was a distinct exostosis.

“(γ) The lower extremity of the right side of one-half of the pelvis, supposed, from the perpendicular direction of the internal surface to the bone, to be that of a male.

“(δ) Two femurs; that of the right side entire, except that the epiphyses and the condyles were separated. The head of the femur adapted itself very accurately to the acetabulum.

“(ε) Two tibiæ, both of the right side, one in good preservation, the other much decayed. This proves the interment of two bodies at least.

“(ζ) Two fibulæ, one of which articulated with the entire tibia.

“(7) One os calcis: with this exception, no bones of the feet were found.

“Judging from the size of the bones, and particularly from the thigh bone, the person would be of the average make and height of the present day (5 feet 8 inches).”

To the above anatomical description of the bones, it need only be added that one, at least, of the bodies had been laid on its right side, with the face to the south, and back to the north, and in a doubled up position, as the jaw-bone was within 18 inches of the west end of the cist, and all that remained of the feet a little more towards the east.<sup>1</sup>

A great portion of the cairn is still unexplored.

## V.

NOTICE OF A COMPRESSED SKULL AND SOME SPECIMENS OF ANCIENT POTTERY FROM PERU, EXHIBITED TO THE SOCIETY. BY COLONEL SIR J. E. ALEXANDER, K.C.L.S., F.S.A. Scot.

The skull which is now exhibited is remarkable for its flatness, leading me to suppose it properly belongs to a North American tribe of Indians—it may have been that of an attendant on a Peruvian Inca. It was dug out of a “chulpa” in Selustani, 4 leagues from Puno, and is the property of Dr Paterson, Bridge of Allan, to whom it was gifted by a friend from South America. Selustani was the old cemetery of the Incas.

The ancient pottery exhibited, and of grotesque forms, was from the interior of Peru, near Cuzco. In the bottom of the shallow vessel is painted the figure of a fish, a siluroid.

As in Africa, so in Peru, on the death of an Inca, a number of attendants were put to death, so that the chief might appear with dignity in the next world, and in their guacas or barrows were deposited mirrors of polished stone, hatchets, and vessels of earthenware.

<sup>1</sup> I am indebted to Mr Robert Love, Lochwinnoch, for many of the details here given.

## VI.

NOTICE OF SOME PERUVIAN ANTIQUITIES OBTAINED FROM A BURIAL-MOUND AT ARICA. (WITH PHOTOGRAPHS.) BY REV. C. L. ACLAND, FOLKESTONE.

In the early autumn of 1868 the west coast of South America was visited by a fearful earthquake, whose effects were distinctly felt even as far off as New Zealand.

Among the phenomena of this earthquake was an enormous wave which rolled in upon the land with irresistible force, and did terrible damage to not less than 1200 miles of coast.

At Arica on the coast of Peru this wave tore open a long line of sandhill running parallel with the shore, and exposed to view many hundreds of corpses, proving that the sandhill had at some time been a burial-mound or place of general sepulture. As far as my informant was able to learn, all tradition of such use of the mound had long been lost.

With the corpses had been buried vast numbers of what may be called domestic articles, and it is upon a small but very perfect and interesting collection of these that I wish to say a few words. The collection was made by G. La-Coste, Esq., H.M.S. Malacca, and by him presented to me. He apologised to me for its being so small, on the ground that as he was but a midshipman at the time, he had nowhere to stow the things but in a corner of his box, but I think it will be admitted that had he gone about to make a collection with a view of illustrating as far as possible the life and manners of these early inhabitants he could hardly on so small a scale have done better.

At first sight it is difficult to believe in the antiquity of the various objects, so perfect is their condition, and so free are they from any traces of even the ordinary wear and tear of a moderate period of time. If, however, we bear in mind that the climate of Peru is one of absolute drought, that no shower of rain ever falls on this strip of land between the Andes and the sea, this preservation of even the animal and vegetable fibres and woven tissues will cease to surprise us. Buried in perfectly dry sand, and thus exposed to neither air nor water, what should cause them



to decay? This peculiar state of preservation appears to me to give the chief value to the collection, enabling it to throw no small light on the prehistoric antiquities of our own and other countries, for here we have the perishable and the imperishable alike presented to our eyes in the connection in which they were undoubtedly employed by the early inhabitants of Peru, and some closely similar connection we may presume to have existed between the similar imperishable objects elsewhere found and the perishable objects with which they too were no doubt once associated.

We have here the flint arrow head still remaining in its curious shaft, the latter apparently so shaped as to fit into a socket in the end of a heavy pole, which pole could be withdrawn and used for a second dart when the first had been driven home. We have the bolas, a formidable block of hard volcanic stone slung at the end of a cord of hair, at the other end of which is a leather loop to pass over its owner's thumb and prevent loss of the weapon. The more modern South American bolas has two stones, one at each end of the cord, and is thrown at the person or animal pursued, instead of being used for striking only, as this one is evidently intended to be. We have a well-shaped copper blade fitted into a convenient wooden handle, used perhaps to curry the hide from which have been cut the child's sandals, placed it may be by some mourning mother in the grave of her little one. We have twisted cords and woven braids, and the raw material of each, necklace, fish-hooks, ear-rings, pins of reeds, of stone, of bronze or copper, showing much elegance of design, and no mean skill of execution.

Again, we have pottery, shapely and somewhat shapeless, the latter bearing evident marks of much use on the fire—bone implements, well made and useful, one so pierced towards its point as to carry a thread through any material perforated by it—spoons, a comb, pins and stamp of wood—spindles, on one of which the yarn still remains, with their whorls of wood or earthenware, and one whorl of stone begun but not completed,—and pins and needles of the long thorns of the acacia. The needles are ground flat and pierced at one end, and among them is one much ruder-looking, made of bone. There is also a small parcel of what appears to be metallic antimony, done up in raw hide. This was taken from a bag hanging round the neck of one of the corpses, and may have been an

amulet. A well-made fishing line and stone sinker were perhaps used with the hooks made of bone and barbed with thorn, and the fish caught therewith no doubt served to give zest to the potatoes, which the forethought of the living has apparently provided to meet the necessities of the dead. Truly a strange thought, suggesting reflection, and strange no doubt the history that would be unfolded by a real knowledge of the first owners of these long-buried treasures.

Are we at liberty to come to any conclusions as to the opinion of these remote ancestors of the human race on the subject of their condition after death, from the fact of their burying with the bodies of their dead friends these objects of every-day use to the living? This is a question most difficult to answer. We may, on the one hand, suppose that the interment with the dead of the utensils which had served them while living proceeded from a natural disinclination in the survivors to use what had been employed by the departed, though in this case we should have expected to find more and larger relics committed to the ground. The notion that the few actually found are typical of the many destroyed, and that the whole property of the deceased was devoted to destruction, though but little was buried with the corpse, involves ideas almost too complicated for those to whom on this theory we should attribute them.

On the other hand, we may think that this plan of sepulture indicates a clear belief in a future state, not perhaps very circumstantially realised, but which will be so far like what the dead are quitting that the utensils of daily life here will be of equally general employment hereafter. The happy hunting-grounds of the North American Indians or the Wallhalla of the Norseman, with its constant scenes of battle and of slaughter, naturally lead to the interment with the dead, in the one case of the implements of the chase, and in the other of the favoured weapons, and perhaps horses and attendants of the departed warrior. A like feeling or expectation may have led these simple Peruvians to bury with their friends these objects of every-day use. An easy, happy, contented people, such as the Spaniards describe the American aborigines to have been wherever they met them, if they looked forward to a future to be modelled, as the mind of man unaided by revelation always does model his future, upon the present, would naturally take care that in this future

life their friends were provided with what might be necessary for the supply of the simple wants to which they had been liable here, and so would bury with them the pottery, fish-hooks, and ornaments to which they were accustomed.

But upon points like these we may wander into almost endless discussions. Perhaps after all the easiest solution is the truest and the best, namely, that these familiar objects thus buried with their departed friends were but the modest offerings of love placed in the tomb to mark affection for the living, and not in any way to indicate belief or expectation for the dead.

It is difficult, with our limited knowledge, to arrive at any idea of even the relative date of these simple pieces of domestic furniture, if I may apply this term to them. My own opinion is that they range over a considerable lapse of time, for it is difficult to believe that the same people at or about the same date used fish-hooks differing so widely from each other, as the thorn armed pieces of bone differ from the shapely copper hooks, while the apparently indifferent occurrence of stone and copper or bronze implements points to the same conclusion. If it be not so, then the broad line between the stone and bronze periods is to a great extent obliterated, so far as Peru is concerned, for here we find both materials present in nearly equal proportions. The ear-rings, if such they be, afford a curious instance of the simultaneous employment of the two, since they consist of cylinders of hard blue stone, pierced longitudinally, from which hang small pendants of bronze, these latter folded so as to resemble tweezers or sugar-tongs.

No trace of iron is found in the collection. This is the first positive fact about it, and from this I conclude that the articles date at latest from a time preceeding or very shortly subsequent to the Spanish discovery of Peru; but I own that another consideration inclines me to ascribe to them a much higher antiquity—an antiquity which would carry them back beyond the epoch of the civilisation which the Spaniards found existing in Peru at the time of their first visit. Any one will at once know what I mean when I say that the pottery in my collection is not at all of the recognised Peruvian type. It presents us with none of the double vessels, with quaint uncouth human heads, which are familiar objects in the ordinary collections of Peruvian antiquities. The vessels

here found are simple, though in one or two cases elegant in shape, and utterly without any attempt at ornamentation. The large one is extremely rude, and altogether, except from the presence of the ears upon them, they look as if they belonged to a period of very primitive pottery indeed.

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MONDAY, 12th June 1871.

DAVID LAING, Esq., Foreign Secretary, in the Chair.

After a ballot, the following Gentleman was admitted a Fellow :—

WILLIAM BARRACK, Esq., Principal of the Dollar Institution, Dollar.

And as a Corresponding Member,—

Rev. JAMES MORRISON, Free Manse of Urquhart, Elginshire.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors :—

(1.) By Rev. JAMES MORRISON, Free Church Manse, Urquhart, Elginshire.

A Collection of Flint Implements, &c., found at Meft and other localities in the parish of Urquhart, Elginshire, consisting of :—

Celt of brownish flint, 3 inches in length,  $1\frac{3}{4}$  inch across the cutting face,  $\frac{3}{4}$  of an inch wide at the small end, and about  $\frac{3}{4}$  of an inch in greatest thickness in the centre. It is roughly chipped in the upper part, and ground to a sharp convex edge on the lower part. The celt bulges considerably in the middle on the one side, while the other side is flatter; and on the more convex side the grinding extends to the top, along the central ridge.

Flint Knife, with ground cutting edge,  $2\frac{1}{4}$  inches in length,  $\frac{1}{2}$  inch in greatest breadth, finely worked on both sides. It is well shown in the annexed woodcut.

For the sake of comparison, another knife of a somewhat similar form,



now in the Society's Collection, is here figured. It was found at Strachur, in Argyllshire. Two others, almost exactly similar to fig. 1, are also in the Museum. One was found in the chambered cairn of Camster, Caithness. (See Proceedings, vol. vi. p. 450.) The other was found with a stone cup and an enamelled bead in a cist under a cairn on the estate of Blelack, Logie-Coldstone, Aberdeenshire. A fragment of a larger



Fig. 1. Flint Knife, with ground edge, found in the parish of Urquhart, Elginshire (full size).



Fig. 2. Flint Knife, with ground edge, found at Strachur, Argyllshire (full size).

knife of the same kind, which was found in a chambered sepulchral cairn at Ormiegill, Ulbster, Caithness, is also in the Museum. This form of flint knife is of rare occurrence, only a few other specimens being known.

Leaf-shaped Spear Head of reddish flint, 3 inches in length, and 1 inch across the widest part, which is at the distance of  $1\frac{3}{4}$  inch from the one end, and  $1\frac{1}{4}$  inch from the other, and whence it tapers regularly to both ends. It is beautifully flaked, the flakes running from either edge till they meet along the centre. One side is almost flat, the other considerably convex.

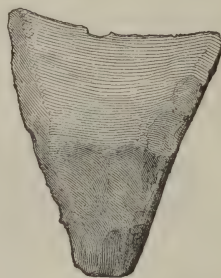
Leaf-shaped Arrow-Head of whitish flint, apparently partially calcined. It measures  $1\frac{3}{8}$  inches in length, and  $\frac{7}{8}$  inch in greatest breadth, which is within half an inch of the broad end, whence it tapers to the point, and is rounded off towards the back.

Leaf-shaped Arrow-Head of brownish flint,  $1\frac{3}{8}$  inches in length,  $\frac{5}{8}$  inch in greatest breadth, at a distance of  $\frac{7}{8}$  inch from the one end, and half an inch from the other, whence it tapers regularly to both ends with a rounded outline.

Leaf-shaped Arrow-Head, also of brownish flint,  $1\frac{1}{4}$  inch in length,  $\frac{5}{8}$  inch in greatest breadth in the centre, whence it tapers to both ends with slightly curved outlines. It is remarkably neatly flaked all over the surface, the flakes running from either side quite to the centre. It is



1.



2.

(1) Serrated and (2) Chisel-pointed Arrow-Heads found in Urquhart, Elginshire.  
(Actual size.)

so thin as to be quite translucent; along the edges it is not thicker than a sheet of writing paper, and in the centre scarcely thicker than an ordinary card.

Two Leaf-shaped Arrow-Heads of brownish flint,  $\frac{7}{8}$  inch in diameter,  $\frac{1}{4}$  inch in greatest breadth near the centre, from which they taper to both ends. These differ from the last only in being very considerably thicker, and not so finely worked.

Leaf-shaped Arrow-Head of reddish flint, 1 inch in length,  $\frac{1}{4}$  inch in greatest breadth,  $\frac{3}{8}$  of an inch from the one end, and  $\frac{5}{8}$  from the other; whence it tapers regularly to both ends with slightly curved outlines.

Leaf-shaped Flint Arrow Head with tang, 1 inch in length and  $\frac{5}{8}$  inch in greatest breadth, where it joins the tang, which is  $\frac{1}{4}$  inch long. In shape this arrow-head is not unlike the "ace of spades."

Three lozenge-shaped Arrow Heads, two of red and one of brownish flint, with straight sides—the largest of the three measures  $1\frac{1}{8}$  inch in length by  $\frac{3}{4}$  inch in greatest breadth, and the smallest  $\frac{5}{8}$  of an inch in length by  $\frac{1}{2}$  inch in breadth.

Eight stemmed Arrow Heads, varying from  $1\frac{5}{8}$  inch to  $\frac{5}{8}$  inch in length. They are all barbed except the smallest, which is shaped like an equilateral triangle with a central stem. The two largest are finely serrated and elegantly formed. The one figured is of whitish flint, and still perfect in point and edge. (See woodcut on previous page.)

Single-barbed or lop-sided Arrow Head of black flint,  $1\frac{1}{4}$  inch in length

Chisel-pointed Arrow Head of white flint,  $1\frac{1}{4}$  inch in length. Flint arrow heads of similar shape are found in the Egyptian tombs (see woodcut); also a small one of yellow flint,  $\frac{3}{4}$  of an inch in length. These are the only Scottish specimens known.

Twelve Scrapers of flint, varying from  $1\frac{1}{2}$  inch to half an inch in length, and all worked to a semicircular edge. Two of them are burned.

One Flat Oval-shaped Implement,  $2\frac{1}{2} \times 1\frac{1}{2}$  inches, worked all round the edges.

Two longish Flakes of whitish flint,  $1\frac{1}{2}$  and 2 inches in length,  $\frac{3}{8}$  and  $\frac{5}{8}$  wide at the butt, narrowing to a point, and having the one side flat and the other convex, and worked regularly along the edges, probably awls or piercers.

Two short Awls or Piercers, with broad butts, 1 inch and  $1\frac{1}{2}$  in length.

Five Flakes, showing peculiar marks on their edges.

A quantity of large and small Chips and Flakes, some of which show partial working.

A Gun Flint of the old-fashioned pattern, found among the other flints.

Two perforated Whorl-like Stones, an inch, and an inch and a-half in diameter, the hole being irregularly shaped, and passing through the stone obliquely in both cases.

Two portions of Jet or Shale, one being a fragment of a Jet Ring.

A quantity of Fragments of Clay Pottery of vessels of different sizes,

showing ornamentation in straight lines, triangular patterns, and rows of indentations with the finger-point.

(2.) By THOMAS EDMONSTON of Buness, Esq., Unst, Shetland.

Collection of Stone Vessels, Implements, &c., obtained in excavations in the Island of Unst, Shetland, for the Rhind Excavation Committee, comprising :—

Three oblong, irregularly rounded Stones, with cavities hollowed in them, the largest measuring 12 inches long, 8 inches wide, and 6 inches deep, found at Clisbow, Island of Unst, Shetland.

Oblong, irregularly shaped Stone, with shallow cavity of rounded oblong form, narrowing to one end, 10 inches in length.

Oblong tureen-shaped Vessel of Stone, with handle-like ledges at the ends, the cavity measuring 12 inches in length, 7 inches in width, and 3 inches deep, found at Clisbow.

Rounded hopper-like Vessel of steatite, with a hole through the centre, about  $1\frac{1}{2}$  inch in width, found at Tourey, Unst, Shetland.

Two Rubbing-Stones of grit, each about 15 inches in length and 7 to 10 inches in breadth, concave on the upper surfaces from use.

Three squarish Vessels of steatite, all imperfect.

Three flat rounded Pieces of steatite, about 6 inches diameter and an inch in thickness, probably covers or bottoms of vessels.

Slab of Silicious Sandstone, 9 inches long, 6 inches wide, and about an inch in thickness, worn into deep rectilinear grooves on both sides, as if by the rubbing of edges of metal tools. A squarish hole has been picked through the stone, as if to pass a string or belt through it for convenience of transport.

Ladle-like Vessel of steatite, having a cavity 4 inches in diameter and nearly 3 inches deep, with a straight handle 4 inches long, found in a moss in Unst.

Two Celt-like Implements of micaceous schist, roughly chipped, 13 inches long and 3 inches thick, found at Clisbow, Unst.

Six portions of Celt-like or Club-like Implements of micaceous schist, also from Clisbow, Unst.

Polished Celt of greenstone,  $3\frac{1}{2}$  inches in length by  $1\frac{1}{2}$  inch in greatest breadth, found in Unst.



Polished Celt of grey sandstone, 6 by  $2\frac{1}{2}$  inches, bulging at the upper part, found in Unst.

Portion of a bronze object, with ornamental ring, found in Unst.

Nozzles of Pottery, with slight glaze, and small (elfin) pipe-heads, found in the same locality. (See subsequent communication by Mr Edmonston.)

(3.) By MESSRS JOSEPH ANDERSON and ROBERT I. SHEARER.

A collection of Objects of Stone and Bronze, and of Animal Remains, from the Brochs of Caithness, obtained for the Rhind Excavation Committee, comprising :—

*From the Broch of Yarrowhouse.*

Two rude Stone Mortars or Basins, being irregularly shaped stones artificially hollowed out.

Six Pounders or Hammer-Stones, varying from 3 to 5 inches in length, being naturally shaped oblong pebbles worn at the ends by use.

Stone Ball, about  $3\frac{1}{2}$  inches diameter, with facets struck off three sides.

Oblong flattish piece of Claystone, being a splinter not artificially shaped, but having a notch about half an inch deep cut in the side near the small end.

Eleven thin flat circular Discs of Sandstone, roughly chipped all round the edges, and varying from 12 to  $2\frac{1}{2}$  inches diameter.

Small conical Core of Flint, about an inch in length, having longitudinal facets struck off it all round.

Small rounded and waterworn Pebble of quartzite, about an inch and a half in its longest diameter, having a hole not quite a quarter of an inch wide drilled through it. An almost precisely similar object occurs among the relics from the Broch of Kettleburn, presented to the Museum by Mr A. H. Rhind.

A small Ring of bronze, half an inch in diameter.

An Armlet of yellow bronze,  $2\frac{1}{2}$  inches in diameter, made of wire  $\frac{1}{16}$  of an inch thick, the wire being round and untwisted for half its length, and the other half made square and twisted so that the corners form a spiral pattern.

A flat circular Bronze Brooch,  $2\frac{1}{8}$  inches in diameter, made of a thin flat band of bronze,  $\frac{1}{4}$  inch wide, and having an inscription incised on its upper surface in rude Roman characters, which seems to read ISVSNAZAR? The formula IHESVS NAZARENVS REX JVDAEORVM occurs on

some flat silver brooches of mediæval workmanship in the Museum. A flat copper or bronze brooch, bearing the same inscription, was dug up on the north side of the Little Ferry in Sutherlandshire. This brooch from the Yarhouse Broch was got about two feet and a half under the surface of the mound close by an interment which had evidently been made long after the ruined Broch had become a grass-covered mound. It is shown in the annexed woodcut.



Bronze Brooch, inscribed, found with human bones in the Broch of Yarhouse.  
(Actual size.)

A quantity of fragments of coarse Clay Pottery, plain and ornamented with the finger-point pattern.

Seven Stone Spinning Whorls for the distaff, one of which is ornamented with concentric circles.

Portion of a Vessel of steatite.

Three Whetstones, one broken, the others  $\frac{1}{2} \times \frac{3}{4}$  inch and  $2\frac{1}{2} \times \frac{1}{4}$  inch square.

Portions of Antlers of the Reindeer (*Cervus tarandus*), obtained from one of the exterior outbuildings of the Broch. (See Proceedings, vol. viii. p. 186, in a paper on "The Reindeer in Scotland," by Dr John Alexander Smith.)

Collection of Animal Bones, including bones of the ox, horse, sheep or goat, red-deer, swine, &c.

Portions of Iron Knives (?)

*From the Broch of Brounaben.*

Rude Mortar Stone, 3 inches across, having a shallow cavity on the top.

Two Stone Balls, about the size of a large orange.

Two Hammer Stones or Pounders, being naturally-shaped oblong pebbles worn at the ends by use.

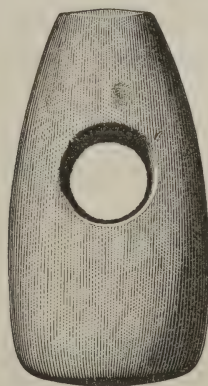
Five Stone Discs, flat circular pieces of slaty stone,  $2\frac{3}{4}$  to 4 inches diameter, roughly chipped all round the edges.

(4.) By the ANTHROPOLOGICAL SOCIETY OF LONDON, through Mr JOSEPH ANDERSON.

Two triangular Arrow Heads of black flint, 2 inches long. Flint Flakes, Scrapers, and portions of the point end of a finely finished Flint Knife with ground edge, found in the floor of the chamber of the Horned Cairn of Ormiegill, Ulbster, Caithness.



Arrow Head of Black Flint.  
(Actual size.)



Hammer of Grey Gneiss,  
4 inches long.

Polished Hammer of grey gneiss, 4 inches long, perforated for the handle, the perforation measuring an inch in diameter, found with the above in the floor of the chamber of the Horned Cairn of Ormiegill.

Fragments of Urns and Burnt Bones from the floor of the same chamber.

[For a description of this Cairn, see Mr Anderson's paper on the Horned Cairns of Caithness, "Proceedings," vol. vii. p. 489.]

Flint Knife, with ground cutting edge,  $2\frac{3}{8}$  inches long,  $\frac{5}{8}$  inch in greatest breadth.

Iron Knife, with tang and thick back, and fragments of Urns found in the floor of the chamber of the Round Cairn at Camster, Caithness. [For a description of this Cairn see Mr Anderson's paper on the Chambered Cairns of Caithness, "Proceedings," vol. vi. p. 442.]

Rounded Oblong Stone,  $4\frac{1}{2}$  inches in length, rubbed and ground on both ends, and chisel-shaped portion of bone, with a quantity of fragments of urns, found in the floor of the chamber of Kenny's Cairn, near Bruan, Caithness.

Six Beads of Jet or Lignite (fig. 1), part of a necklace of seventy, found in a secondary cist, with an urn ornamented with the twisted cord pattern, on the floor of the Horned Long Cairn, at Yarhouse, Caithness. (See "Proceedings," vol. vii. p. 498.)



Fig. 1. Beads of Lignite found at Yarhouse.  
(Actual size.)



Fig. 2. Arrow Head of Flint.  
(Actual size.)

Two oblong portions of Split Pebbles of Flint, worked on the edges, found, with portions of an urn with the twisted cord ornamentation, in a short cist, under a small cairn, having an alignment of radiating rows of standing stones, at Garrywhin, near Whaligoe, Caithness.

Small leaf-shaped Arrow Head (fig. 2) and Flint Flakes, found in the chamber of the Horned Cairn of Get, at Garrywhin, Caithness. (See "Proceedings," vol. vii. p. 500.)

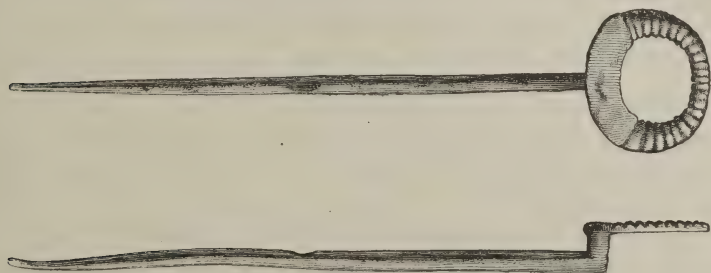


*From the Broch of Bowermadden, Caithness.*

Oval Cup of Red Sandstone, 7 inches in length, 5 inches in width, and 4 inches deep. It bears marks of fire, and has been split lengthwise.

Small Comb of Bone, with open semicircular handle, and thirteen short teeth.

Bronze Pin,  $3\frac{1}{2}$  inches long, with open circular ornamented head. [A Clay Mould, for casting pins similar to this one, was found in the Broch of Lingrow, Orkney, by Mr Petrie, and is now in the Museum.]



Bronze Pin from Broch of Bowermadden. (Actual size.)

Two Spinning-Whorls of Stone for the Distaff,  $1\frac{1}{2}$  inches diameter.

Bead of Blue Vitreous Paste, triangularly compressed, and having spirals of yellow enamel on its flattened faces.

Disc of Red Sandstone, 7 inches diameter, perforated by a hole in the centre,  $1\frac{1}{2}$  inches diameter.

Round Stone Balls, about  $3\frac{1}{4}$  inches diameter.

*From the Broch of Old Stirkoke.*

Two Whorls of Sandstone, rudely chipped to shape.

Bone Bodkin, 8 inches long.

Whetstone, 4 inches long,  $1\frac{1}{4}$  inch broad, and  $\frac{1}{2}$  inch thick.

Portion of Bronze Rod, 3 inches long, about  $\frac{1}{8}$  inch in diameter.

Hammer Stone, being a naturally-shaped oblong pebble of sandstone,  $7\frac{1}{2}$  inches long, and  $3\frac{1}{2}$  inches thick, found lying on the cover of a stone

cist, in a cairn on the Warth Hill, Canisbay. The bottom and end slabs of the cist had been roughly squared to fit,—this hammer-stone being in all probability the instrument with which it was done.

- (5.) By the Rev. JAMES MACPHERSON, minister of Canisbay, Caithness, through Mr Joseph Anderson.

Portions of Antlers of Red Deer ; Hammer Stone,  $7\frac{1}{2}$  inches in length, greatly worn at one end ; and oblong flattish Hammer Stone,  $4\frac{1}{2}$  inches long, worn obliquely on both sides of one end ; found in the churchyard of Canisbay. [The Church of Canisbay is built on the mound covering the ruins of an ancient broch. See paper by Mr Anderson on the Brochs in Caithness, &c., in "Arch. Scot.," vol. v.]

- (6.) By CHARLES WILLIAM PEACH, Esq., Haddington Place.

Flat Stone,  $8\frac{1}{2}$  by  $4\frac{1}{2}$  inches, with two intersecting circular hollows pecked in its upper surface ; found in the broch of Old Stirkoke, Caithness-shire.

Hammer Stone, an oblong pebble of micaceous sandstone, 4 inches in length, worn at both ends by use ; found in the broch of Old Stirkoke, Caithness-shire.

Stone Mould, 3 inches by  $2\frac{1}{2}$  inches, apparently for buckles, found at Canisbay, Caithness-shire.

- (7.) By Rev. ARCHIBALD CLERK, Kilmailie.

Water-worn Slab of Micaceous Sandstone, about 7 inches square, and  $3\frac{1}{2}$  inches thick, having on both its flat sides annular hollows, 3 inches diameter, about  $\frac{1}{2}$  inch wide, and  $\frac{1}{4}$  inch deep, apparently moulds for casting rings of metal ; found at Kilmailie, Inverness-shire.

- (8.) By Mr ANDREW PURDIE, farmer, West Mains of Calder.

A beautifully serrated Arrow Head of whitish flint, with barbs and stem,  $1\frac{1}{4}$  inches in length.

- (9.) By Mr JOHN BLAIR, student, School of Arts, Royal Institution.

A Whetstone of Micaceous Schist, worn in long hollows on the sides by sharpening pointed tools : found below Salisbury Crags.

(10.) By Mr R. BROCKLY, farmer, Gourlaw, Roslin.

A Whorl of Red Sandstone,  $1\frac{1}{4}$  inch diameter, finely ornamented with a floral pattern.

(11.) By R. B. ARMSTRONG, Esq., Littleton, Girvan.

Bronze Brooch, flat and circular,  $1\frac{1}{2}$  inches diameter, found at Brae, near Girvan, Ayrshire.

(12.) By the Rev. Professor DUNS, D.D., through Dr J. A. Smith, V.P.S.A. Scot.

Five Indo-Scythic Brass Coins from Northern India.

(13.) By DAVID GRIEVE, Esq., F.S.A. Scot.

Thirteen Aberdeen Pennies of Alexander III. (an unpublished variety.) (See "Notes on Coins found in Scotland," by George Sim, Esq., F.S.A. Scot., *Curator of Coins*.)

(14.) By THOMAS EDMONSTON of Buness, Esq.

Silver Coin of Haco V. (Hakon Magnusson) of Norway, dug up in the Island of Unst, Shetland. (See "Notes on Coins, &c.," by Mr Sim.)

(15.) By JOHN DICK, Esq. of Craigengelt, the Author.

"Here and There in England." Lond. 8vo. 1871.

(16.) By J. STEWART M'CORRY, D.D., the Author.

"The Monks of Iona in reply to 'Iona,'" by the Duke of Argyll, with a Review of "The Cathedral and Abbey Church of Iona." Lond. 8vo. 1871.

(17.) By the SOCIETY OF ANTIQUARIES OF NEWCASTLE.

Lapidarium Septentrionale. Part 2. folio. 1871.

(18.) By the Right Hon. the MASTER OF THE ROLLS.

Polychronicon Ranulphi Higden. Vol. iii. 1871.

(19.) By the SOCIETY OF ANTIQUARIES, London.

Archæologia. Vol. xl. Part 2, and vol. xliii. Part 1.

The following Communications were read :—

## I.

REMAINS OF EARLY ANTIQUITIES, IN AND ON THE BORDERS OF THE PARISH OF URQUHART, ELGIN, INCLUDING HUT CIRCLES, KITCHEN MIDDENS, STONE CISTS WITH URNS, STONE WEAPONS, &C., &C. BY THE REV. JAMES MORRISON, F.C., URQUHART, ELGINSHIRE. (PLATE XXI.)

This parish is bounded on the north-east by the Moray Firth, and extends on that side from the mouth of the River Spey to the mouth of the Lossie, a distance of about seven miles. It stretches eight miles inland in a south-west direction, and at its southern extremity narrows to a point. The north-west angle, near the Lossie, is a dead level, elevated only a few feet above the sea. This flat, which runs through the Loch of Spynie, and the valley of Drainie and Duffus on towards Burghead, sends at many points small branches or arms a considerable way inward amid the higher grounds, almost surrounding some of the eminences. With these exceptions, the whole district is irregular and undulating, finely diversified with heights and hollows. Along the shore there is a barren strip, of a mile in breadth, of shingle arranged in nearly parallel ridges, which have been piled up by the waves from the materials carried down by the Spey. Inside these links, the ground has been brought under cultivation for fully three miles toward the south. The soil generally is very light and sandy, and when broken up by the plough in spring, the whole surface, and the higher knolls especially, are exposed to the fury of the prevailing west winds, and for days the sky will be darkened by thick clouds of dust. Thus year by year the hillocks which dot the district are bared and lowered by the drifting away of the lighter portions of the soil.

Above this sandy tract, farther inland, on both sides of the road which connects Fochabers with Elgin, there stretches a wide belt of very dry gravelly land, of which considerable portions have been brought under cultivation during recent years. May it not have been the lightness and dryness of the surface which in ages long gone by led our predecessors of early times to form settlements in this district? Be this as it may, there can be no doubt that they had early taken up their abode in this eastern corner of the province of Moray, and that they must have occupied it for a long time. They have left unmistakable traces of their presence in flints,



cists, urns, huts, circles, pit dwellings, and kitchen middens, scattered pretty abundantly within or on the borders of the parish.

*Kitchen Middens, &c.*—As the most interesting of these remains have been found on the farm of Meft (Upper and Lower), it may be well to describe its form and position. It lies fully four miles, due south, from the sea at Lossiemouth, and contains some four or five hundred acres, being about a mile long from north to south, and about three quarters of a mile across. Its form is that of an oblong promontory, jutting out into the level plain already referred to, and surrounded by it on all sides save the south. On the north front it rises abruptly, as a steep headland, out of that wide sea of plain which stretches away through Drainie and Duffus. This headland is more than a hundred feet above the plain at its foot. The ground sinks slightly as we proceed southward till we come to the centre of the farm, where it rises and swells into a conical eminence covered with wood, called “the Castle Hill,” which has along its face a deep gash or trench, evidently artificial. From this the field slopes gently till it falls to about the same level as on the north side, and then it joins on to the wide undulating sandy expanse which runs through the middle of the parish, from the mouth of the Spey westward to Birnie. The northern headland is styled “the Hill of Kinnairdie ;” and there is a tradition that a harbour at one time existed at its base. The sea is now four miles away, but there are good grounds for believing that within the human period, the tides rose and fell daily at the foot of the promontory. At high water, the canals and ditches within a mile of it are affected and dammed back. On the top there occurs a very extensive “kitchen midden ;” and Sir John Lubbock tells us that in Denmark such heaps are always found on the shore, or on what must have been the shore at the time of their formation. This “kitchen midden” lies in a slight depression about a hundred and fifty yards back from the crest of the northern headland, and covers nearly two acres. I have had a trench cut across it for fifty yards, and pits dug out at many different points, so as to ascertain accurately its nature and extent. There are first fully eighteen inches of excellent soil ; and then beneath this, and resting on the yellow sand so common in the district, there is the same depth of shells, of a nearly uniform thickness of from eighteen to twenty inches. They are closely, densely packed together.

At some points they are almost wholly of the common whelk ; at others, exclusively of very large oysters, but more generally oysters, whelks, cockles, mussels, and limpets are jumbled together. These are by far the most common varieties, the specimens of *Buccinum undatum*, and of one of the forms of *tapes* being of rare occurrence. Ashes, cinders, and stones, which have been in fire, are seen here and there. But the most careful search failed in detecting any fragments of flint, pottery, or bones, such as might have helped in determining the age of the mound. Quite close to it, however, on a sandy slope, I have picked up numerous flint chips and flakes, as well as a few rudely or imperfectly finished instruments, and fragments of pottery are met with on the same spot. In the "Natural History Review," of July 1863, Sir John Lubbock describes a shell heap at Brigses on the loch of Spynie, two miles nearer the sea than the heap on the Hill of Meft, and he figures a bronze pin found there (and now in Elgin Museum), which competent authority pronounces to be a thousand years old. Eastward from Brigses on the links, half way 'twixt Lossie and Spey, small shell mounds are seen with fragments of pottery and large rusted iron fish-hooks. I am inclined to think that the Meft mound is much older than either those at Brigses or on the links. Its distance from the sea, its contiguity to the flint manufactory to be noticed presently, its extent, and the existence of pottery, flint-chips, and instruments in its close neighbourhood, all point in this direction. But its age cannot be conclusively determined so long as no remains of domestic or warlike instruments occur in it. Oysters, whose remains constitute a large part of the heap, are not now to be found on the south side of the Moray Firth, though they were common enough at one time, living and dying in countless thousands in the bed of the Loch of Spynie, when it formed an arm of the sea.

About half way between the shell heap and the Castle Hill there is a mound-shaped hillock called "The Witches' Hillock," crowned with a solitary boulder of granite about five feet high. The mass was not always solitary. Several years ago it had a good many companions as stately as itself. These, however, were broken up and removed to help in the erection of a threshing mill. There are a good many largish boulders around and upon the mound, and it is probable that the upright stones had been grouped around a tumulus of earth and stones; the latter

mostly carted away for building purposes, and the former gradually drifted away by the wind. There are no quarries in the parish, and few surface stones in the lower part of it, and so cairns are known to have been removed for the erection of houses.

*Flint Implements, &c.*—But the most interesting spot on Meft farm is a small field of about eight acres at its southern extremity, a mile further inland than the shell mound. The soil is exceedingly light, and of no great depth. For ages it had lain under heather and broom. In 1840, the father of the present tenant had it cleared and improved. Owing to the lightness of the soil, and the elevation of the ground, exposed to the full sweep of the prevailing west winds, the field, as often as it is broken up by the plough, is subject to “blowing” or drifting; the higher parts have in consequence been considerably lowered since it was first reclaimed, and huge wreaths of drifted material have accumulated in the adjoining hollows. In the spring of 1870, it was prepared for green crop. The earth had been thoroughly pulverised by the prolonged and intense frosts of the preceding winter. In the middle of April a fearful gale of wind swept over it, carrying before it most of the surface soil, and leaving only a thick covering of small stones and gravel. Crossing the field shortly after, I picked up a rudely wrought piece of flint. This led to a search for more. The result was that I found the ground, especially about the centre of it, sprinkled with thousands of fragments of flint of all shapes and dimensions. The great bulk of these are chips, some of them very minute, others pretty large and passing into flakes. There were found several blocks or cores which had been partially used, none of them much more than two inches long. Not many complete instruments occur, nor is this to be wondered at. The arrows and spear heads which had been manufactured in this extensive workshop were meant for war and the chase, and not for use on the spot. Still a goodly enough assortment of wrought and half-wrought articles have been picked up. Among these is a polished stone axe, six inches in length, while well-formed arrows of the barbed sort have been gathered. Several diamond or lozenge-shaped, and some leaf-shaped, have also been got. Scrapers are more abundant than arrows, though generally they are small in size. In addition to a larger assortment of rough flakes, there are many flake-shaped pieces all more or less chipped and wrought, and which may

have been rude spears, or arrow heads, or instruments marred in the making, and then thrown aside as useless. Besides all these there are very many small pieces undoubtedly manufactured, though for what purpose I do not know.

Among the countless chips, there are hundreds which are plainly chips never touched by tool since they were broken off, but which are so thin, and sharp, and neat, that they might well have been employed as tips to arrows, many of them being larger than the lozenge-shaped arrows, and as well adapted for use as they.

While the flints were found abundantly all over the field, there were certain spots where they were very thickly scattered, and from which probably the outlying ones had been dragged by plough or harrow. Plainly there had been an extensive manufactory of stone implements on this field, and in some places one could almost point to the spot where the old workman sat as he laboriously chipped out his instruments.

*Stone Cists, &c.*—But there are other indications on the same field of the presence of man. In the Statistical Account of 1842 it is stated that in carrying out the improvement, “a hillock or barrow on being opened was found to contain two very rude urns full of ashes and burnt bones.” The urns fell to pieces, and no account can be got of their shape or size. One of them was found in a stone cist of four slabs, covered with a large flag, and a skeleton of a full-grown man lay in the cist. The slabs were carted away and the bones buried. Many years ago, a gravel pit was opened in a corner of the field, and an urn was found at a considerable depth in the gravel. During the past summer a rude cist was opened. In forming the drills for the turnip crop, the plough struck against an earthfast stone. In removing it many similar boulders were observed and removed, and the earth was about to be levelled, when the spade touched a rough sandstone slab, set on edge. Clearing out all round, we had before us an exceedingly rude cist, about three feet in length by two in breadth. The sides were formed of six thin pieces of sandstone, so placed as to give the appearance of a modern coffin, wider at the middle than at the ends. The cavity was filled with sand, and on clearing it out a very rude urn was exposed lying on its side at the south end. The urn was broken, but had enough of completeness to show both its form and size. The bottom, fully an inch thick, is four inches in diameter.



It is flower-pot shaped, stands seven inches high, and had been seven across the top. It is marked round the upper edge with three rows of indentations, such as might be made by the point of a small finger. Below this it is surrounded by a double line, followed by another series of indentations. Then come two lines, and triangular figures, one within another, rest on the lower of these lines. There was no cover upon the cist, and no appearance of either bones or ashes in it or in the urn; and a careful search failed in detecting any pieces of flint or remains of any sort.

*Ancient Dwellings, &c.*—The field had its houses as well as its workshops and graves. After it had been ploughed there were observed black mossy-looking patches, very noticeable amid the light-coloured sandy soil. The blackness was found to be occasioned by the presence of ashes and cinders. On clearing away to a depth of about fifteen inches, we met beds of ashes and charred bits of wood, with occasional fragments of pottery and small stones that had been in the fire. These lay on the even surface of the yellow sand. Neither the shape nor dimensions of these pits could be accurately ascertained. The ground had been much lowered by the wind, and greatly disturbed and broken up by the plough. The pieces of pottery, some of them ornamented, are in general of better quality than the urn found in the cist. Many fragments have been picked up on the surface over the whole field, and some of them are calcined. From some of the pits pieces of flint have been taken, one small flake being bedded in a consolidated lump of ashes. While the forms cannot be determined with any accuracy, the number of the pits has been great. They are common over all the eight acres, which must have been honey-combed with them; and burned stones are scattered about in all directions. Bones, and oyster and other shells occur plentifully. Evidently there had been in this corner a considerable settlement of the flint-using people, and here are the remains of an extensive village of pit-dwellings, the homes of those who wrought the flints, and built the cists, and baked the pottery.

On the slope of a wooded knoll, about three hundred yards from the flint field, there is a circular bowl-shaped hollow, having a raised border with a break in its south-east side, and a diameter of twelve feet. On digging into it, there were two feet of sandy soil, beneath which lay

twenty-two inches of ashes and cinders. There were some fire-blackened stones lying in the ashes, but no traces of bones, pottery, or flint.

*Cairns, Cists, &c.*—Two years ago, on a slight eminence about half a mile south of the flint field, a remarkably fine cist was discovered. There had at one time been a cairn or tumulus upon the spot, the materials of which had been removed for building. The cist was four feet two inches long, by two feet four in depth and breadth. The sides and ends were huge slabs of great thickness, and a massive flag of sandstone, six feet by four, formed the lid. The cist was about half filled with sand, in which lay the perfect skeleton of a man of more than ordinary height, the bones being in excellent preservation. Near the middle, on the right hand side, lay a flint spear-head, now deposited in the Elgin Museum. The skull and some of the bones have been sent to Professor Turner, of Edinburgh, for examination. A similar cist was found many years ago in another corner of the parish; and in March past a ruder one, containing some decayed bones, was exposed on a sandy knoll, where twenty years ago a cist with a complete skeleton was discovered. In this last, a jet necklace, now in Elgin Museum, was found.

*Standing Stones, Circles, &c.*—Near the centre of the lower part of the district, a mile east from Meft, on a commanding situation, there are the remains of a stone circle. It is called "the nine stanes." They are now only eight, two of them prostrate, and are six feet high. They form a semicircle, having several breaks in it, with a diameter of fully thirty-five yards. About half a mile to the north of these, there were, thirty years ago, several upright stones of the same character and size, which were broken up and carted away to build cattle sheds. On the borders of the parish, near the pretty village of Lhanbryde, stand two fine solitary stones, more than six feet high, to testify to the existence of a circle destroyed in 1810, to aid in the erection of a bridge. About 1830, five similar stones, named "The Haer Stanes," placed in the form of a horse shoe, and standing about half a mile from Lhanbryde, were unfortunately found to lie in the line of a road then formed, and were ignominiously tumbled down the slope on which for ages they had rested, and buried in a gravel pit by the side of the road.

*Flint Implements, &c.*—It has been stated that the parish exhibits

a constant succession of heights and hollows. Generally the former have only a thin covering of light soil, and until a recent period they lay waste, bearing only thickets of furze and broom. Gradually they have been brought under cultivation, and, save when laid out in grass, they are more or less stript every spring and left covered with gravel. On most of these knolls when thus bared—and there are scores of them in the district—flints and fragments of pottery occur. Spears, arrows, scrapers, and other instruments have in years past been picked up by ploughmen, and in most cases been either lost or destroyed. Still, however, they are far from uncommon. Flakes, blocks, chips, and wrought articles can be gathered after a high wind in spring, and the writer has a goodly variety, all collected during the past twelve months, and which are of the same character as those found in Meft. One man tells me that for years he has supplied the smokers in his neighbourhood with flints found on a small eminence on his croft, and the numbers still to be seen, and the presence of fire-touched stones, and the existence of pits filled with charred wood and ashes, show that there had been a settlement and a small manufactory on this spot. A little below and to the east of the conical hillock of “the law”—when some years ago a valuable find was made of three dozen pieces of gold armlets, two of which are in Edinburgh Museum—quantities of flints occur, while on a sandy field near they are met with in numbers as large as on the Meft field. In a few days this spring, a herd boy has gathered on the slope of a small grass park hundreds of fragments and flakes, besides a few barbed arrows, and several small scrapers. And there can be no doubt that when the ground is broken up, they will be found more abundantly still. On the same spot an irregularly-shaped stone whorl has been got, and many fragments of old pottery, while the stones scattered on the surface show that they have been subjected to the action of fire, and the indications of pit dwellings are very marked. On a rising ground near this field, inside the plantation that borders it, there is a cairn surrounded with massy stones. It has been opened, but I am not aware that aught but ashes has been found.

There are several other localities where flints are met with in considerable numbers, and where they must have been abundant when the plough first disturbed the ground; and it is clear, that, while the most extensive

manufactory existed at Meft, there were smaller ones, as well as many isolated workshops, scattered up and down the district. The mere finding of a few finished instruments would not suffice to show that this was the case, but the presence of such articles alongside of thousands of chips and fragments, of multitudes of half-wrought pieces, and of blocks—the raw material of the workers—manifestly leads to this conclusion.

The notes hitherto given refer exclusively to the lower district from the shore inward for about three miles. Farther up, in the southern parts,



Fig. 1. Flint Celt.  
(3 inches long.)

the character of the soil changes, and instead of a light, soft, sandy surface, we have a hard, dry, and gravelly one. The highway from Fochabers to Elgin enters this upper district about two miles west from the river Spey, and intersects it for three miles. On both sides of the road the ground is hard and shingly, and until lately was covered with wood. A broad belt of moorland stretches away on the south-west side of the road, past the Fochabers station of the Highland Railway, crosses the southern portion of St Andrews-Lhanbryde, and swells up into the Brown Muir, a hill of 800 feet, in the eastern extremity of the parish of Elgin. Near the side of the road, about three miles west of the Spey, is seen

“Kenny’s Hillock,” on which, a hundred years ago, Kenny Leal was executed for robbing the mail, his body being hung in chains, and buried along with the chains at the foot of the gallows. All round this spot the early remains are numerous. From fields recently reclaimed I have got, besides many pieces finished or half finished, four stone axes, ranging in length from three to five inches. They are all polished. One is of yellow flint (fig. 1), ground to a fine edge, and which may have been originally of a ruder form, and then been polished and improved. One was found in levelling a tumulus of earth and stones. Here, too, from near Kenny’s Hillock, is a hammer, apparently of white flint, streaked with red, 3 inches long. In the plate a figure







Fig. 1. Found in Urquhart, Elginshire, Scotland.  
(Ornamentation Unfinished.)

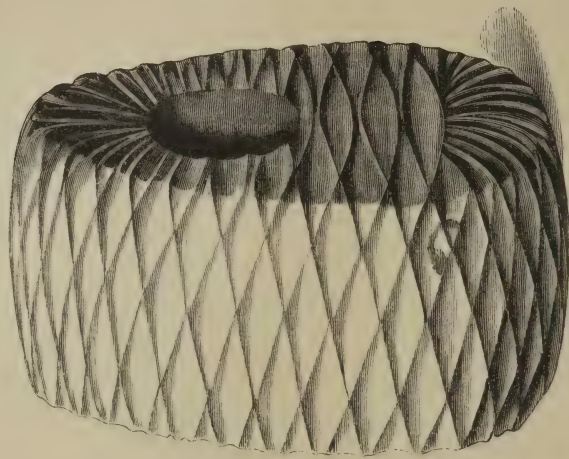


Fig. 2. Found near Corwen, Merionethshire, Wales.  
(Ornamentation Finished.)

of this hammer (Plate XXI. fig. 1), is placed alongside of that of the beautiful specimen found near Corwen in Merionethshire (fig. 2), and presented to the Museum, by Rev. E. L. Barnwell, F.S.A. Scot., in 1864 (Proc. vol. vi. p. 43). The latter is slightly larger and is complete in its ornamentation, which is wrought with much precision and must have cost great labour. The Urquhart one, exactly of the same pattern, is in an unfinished condition. The Welsh workman was able to finish his weapon. The Scots one was arrested when he had only completed part of his work and outlined the remainder. The Urquhart specimen is interesting as being the only Scottish example of this type; one end is fluted diagonally, with great labour. The process, which was meant to have been extended over the whole surface, was never finished; down one side the flutings are begun, and down the other the pattern is merely marked off by little nicks rubbed with sharp sand into the hard stone. The hole for the handle, which is not in the middle of the implement, but nearer its small end, has been bored from both sides, but the borings have not met exactly in the middle, and the hole has been made straight by subsequent grinding.

Of the Corwen specimen Mr Barnwell says:—"The enormous amount of labour that must have been bestowed on cutting and polishing, would indicate that it was not intended for ordinary use as a common hammer. Various suggestions have been made. Some have considered it as the war implement of a distinguished chief; others, that it was intended for sacrificial or other religious purposes, or as a badge of high office. Whether it has been worked with metal tools or not is uncertain, but probably with the latter, owing to the hardness of the stone. The hole seems to be slightly converging at each aperture. How the polishing has been effected is also uncertain, as the ordinary method of friction would have been difficult from the nature of the pattern."

Several blocks, flakes, and chips of flint, with a few arrows, have been recently gathered in the neighbourhood. The flint knife (fig. 2), p. 260 ( $2\frac{1}{4}$  inches long by half an inch broad), also found here, is a beautifully finished specimen, of a kind by no means common (see Donation List, p. 239). The back is carefully wrought by chipping, and the cutting edge finely ground on both sides. The notch in the blade was made by the youth into whose hands it fell. Only a few more

specimens of this form of knife are known, all of which are in the Society's Museum.

*Tumuli, Cairns, &c.*—All around there have been numerous cairns or tumuli, some of them composed of earth and stones, and others wholly of stones. Generally, they have had round them a circle of large stones. From one of these cairns a fine urn was 'got, which is now deposited in the Elgin Museum. Two, which I had opened this spring, had only layers of ashes. Not far from these is a cairn eight yards in diameter, opened on 4th May. As from others, many loads of building materials had been removed from it. Four large masses of stone lie round the edge, marking where a complete circle had existed. About two yards within the circumference, on the east side, a pit five feet deep



Fig. 2. Flint Knife with ground edge. (Actual size.)

had been dug. Its bottom was covered by two inches of ashes, and over these lay a flag of 3 feet long by 20 inches broad. Above this were heaped massy boulders. Beneath the flag and the ashes an urn was got lying in a sloping direction, broken in several places. But all the parts have been obtained and put together. It is 3 inches across at the bottom, 7 at the middle, and 6 at the top, and  $5\frac{1}{2}$  deep. Internally, the bottom resembles the circular hollows found at the extremity of ordinary glass bottles. Round the exterior are two rows of triangular shape, formed thus  $\nabla \nabla$ . The lip is not rounded but flat, sloping inward, and is ornamented with two rows of dotted lines. It had been filled with blackened sand, not much darker, however, than the sand into which it had been sunk.

All around Kenny's Hillock, near which the urn, hammer, hatchets, and many flints have been found, there are great numbers of pits, many of them hitherto untouched. Some of these are twelve feet in diameter,



and are filled with ashes and cinders, beneath a foot or two of sandy soil. A few of them have been dug into, but nothing save ashes and burned stones have been met with in them. At a distance of a quarter of a mile from the hillock there is a long wedge-shaped ridge. At its western extremity the ridge has a deep trench across it. This trench is carried all round the extremity, and at several points in the bottom of it there is a considerable depth of ashes and cinders, similar to what is found in the pit dwellings. This circular trench will be about two hundred yards in length, and encloses a flat-crowned eminence, which rises some fifteen or twenty feet above the bottom of the ditch.

*Flint Weapons, &c.*—On the south-west side of the Fochabers road, on the expanse of moorland which stretches past the railway station to the Brown Muir, there have been gathered, and are still gathered, countless flints. In some spots they lie so thick that a ploughman tells me he has picked them in handfuls while letting his horses breathe for a few minutes. Near the Fochabers station, close to the spot where the beautiful gold lunette, now in the Society's Museum, was picked up about a year ago, some fine arrows and spear heads have recently been got. The barbed arrow head (fig. 3), is of chalcedonic flint, and remarkable for the elegance of its form and the neatness with which its edges are serrated. The chisel-shaped instrument (fig. 4) beside it, is thus described by Mr Evans :—"It appears to be a large arrow of the chisel-ended type. The edge is formed by the sharp side of a flake, and the sharp angles at the two sides of the arrow-head have been removed by chipping, probably to prevent their cutting the ligament that attached it to the shaft." He speaks of it as resembling some specimens from Egyptian tombs, where the head differs from all the ordinary forms, being chisel-shaped rather than pointed. Arrows of this type are very rare. The simplicity of their form may have caused them to escape observation. A spear head 3 inches long, pointed at both ends; another triangular one  $2\frac{1}{2}$  inches long, and several arrows, both of the barbed and the diamond form, were also found in this locality. A little further south there is, beside a small mountain burn, an eminence called Auld Shiels (Alt-Shiels?) where pit dwellings are abundant, and in which flints, and occasionally pieces of agate, occur, and near which there is a curious gathering of stones broken to the size of road metal, which bear

evidence of having been subjected to fire, and which have mingled up with them very richly heaps of ashes and charred wood. Similar small mounds of broken stones and ashes are to be met with in several places through the parish, and in such of them as have been levelled down nothing is seen but the blackened fragments of stones and the ashes. In the Statistical Account of the parish of Rafford of 1842, the late Dr Mackay makes mention of many such heaps in that parish, and states that when turned over there was emitted a smell like what would be experienced from a newly dug grave in a churchyard.



Fig. 3.



Fig. 4.

Serrated and Triangular Arrow Heads of Flint. (Actual size.)

I am satisfied, from statements made to me, that from the moorland in the upper portion of the parish, where cultivation of the waste has been going on extensively for the past quarter of a century, there have been during that time picked up, and either lost or destroyed, as many flint instruments and weapons as might have formed a good collection for a provincial museum. The considerable number of specimens in my possession have almost all been found during the past twelve months. The abundance of remains in this eastern corner of the province of Moray demonstrate that a numerous colony of the flint-using people had long been settled here. It may be difficult to say where the materials which they have wrought so well came from. Dr Gordon, of Birnie, in a paper read before the Elgin Literary and Scientific Association in 1864, says,

“Although a few of them (the flints) may have been picked up upon the shore, the vast bulk of them must have been brought from afar. To upset this idea it is not enough to say that those who thus so highly valued flints may have so long and closely ransacked our shores for it, that almost none of it has been left on them. Since these weapons were made and used the surface of the land by the edge of the sea has again and again been changed. In some places fresh banks of sand and shingle have been thrown up, and in others as much washed away, so that in our day we have as full and fresh an exposure of flint pebbles (poor, in fact, as they are) as the Allophyllian races could have gathered theirs from. Knowing pretty well the contents of the beaches around the Moray Frith, I am persuaded that no such collection of flint could be made in a lifetime from any spot nearer, at least, than the *debris* of the chalk formation that remains at Cruden, in Buchan. But it is far more probable that early traffic or barter has brought these flints from a much greater distance, and, at least, from beyond the Tweed.” Such is the opinion of Dr Gordon, and no man’s opinion on such a matter is entitled to greater weight. The flints found here are of every variety of colour, and Mr Jamieson, of Ellon, writes me that the Buchan flint nodules are “of all colours—yellow, red, white of a great variety of hues, and a dark smoke-grey.” This exactly describes the prevailing colours of our Urquhart specimens, lending strength to the conjecture that, however it may have been with other parts of Scotland, our predecessors in Moray were acquainted with the remains of the chalk formation in Aberdeenshire, and drew upon them largely for the manufacturing of those tools and weapons which have for countless centuries resisted the wasting tooth of time, remaining as fresh to-day as when they left the workman’s hands. It is, at the same time, by no means improbable that portions of the rude material may have been gathered out of the chalk cliffs of Old England, and that a system of traffic may have existed then, as now, between the northern and southern parts of the island. The moulds found in Ross-shire for casting weapons of bronze prove that such traffic existed in the bronze age, and favour the conjecture that it may have sprung up long before. This much, at least, we think is certain, that Moray itself never furnished the flint pebbles, the chips and flakes of which are found so abundantly within its borders.

## II.

NOTE ON THE SUPPOSED "CHARTER CHEST OF JOHNNY FAA" AND ITS CONTENTS—PROBABLY THE OFFICIAL BOX AND PLATES, WITH TRADE MARKS OF THE INCORPORATION OF PEWTERERS OF EDINBURGH. BY JOHN ALEXANDER SMITH, M.D., V.P.S.A. Scot.

The box and its contents, two metal plates covered with die stamps, &c., now exhibited, were apparently given some time ago by Mr E. Huie to the late Sir J. Y. Simpson, Bart., to be presented to the Society, but somehow or other had been overlooked, and were only presented to the Museum after Sir James's death. The box contains also a written paper, which tells the following curious history :—

"JOHNNY FAA'S CHARTER CHEST.

"This coffer and contents belonged to a gipsy family of the name of Faa, and was called the Charter Chest of the celebrated Johnny Faa and Family, the Stamped Charter being their warrant to travel and trade through the country. It is stamped from 1600 to 1750, one hundred and fifty years. After the one was filled, a second has been prepared, but only two stamps appear on it, and on two other detached pieces. Perhaps at that time the printed hawker's licence superseded the more primitive one."

"E. HUIE."

A card in the box, with the date "1843, states that the box and contents were preserved in a gipsy family till within the last few years."

The box, which is of oak, bound and richly ornamented with iron straps and two separate locks, has a sort of official looking character, and contains two peculiarly shaped plates of pewter. These plates are elongated in form, and have circular heads. They somewhat resemble in shape the old conventional representations of the Stone Tables of the Law, and measure  $12\frac{1}{2}$  inches in length by  $4\frac{1}{2}$  inches in breadth; they bear on their surface a series of punched impressions of stamps or dies, some with dates running from 1600 down to 1764. The die stamps on the rounded head of the plate vary considerably both in shape and character. They are apparently the earliest in date. We have among the first a figure like



a St Andrew's Cross; another with the addition of initials, monograms of initials as J. S., and simple initials. One displays the initials J. R., with the date, 1600, above them. Then we have simply a castle; next we have the castle, varying in style, with initials on each side, and later, with the addition of a date below the castle; the first being 1610, with the initials G. G. This series of castle stamps then runs regularly on over the plate, with varying initials and dates down to the year 1764. A few stamps of a different character occur among the earlier castle stamps, as, for example, one displays the initials and a hammer between; another initials and a small expanded rose between them, and the date 1616; this last single stamp is repeated on the back of the plate, which is otherwise plain. The second plate bears only two stamps, the castle, with the initials J. B. and the date 1760, and another with the initials J. G. and the date 1764.

Besides these official like plates, the box contains two cut portions of apparently an ordinary pewter plate; one of these bears two stamps, a large expanded rose, like the rose on the early coins of England, with a crown above, and with the initials on each side. The other portion of pewter plate bears a slightly differing rose, &c., and is inscribed below it **HARD MET**—the rest of the word being illegible, probably for **HARD METAL**; evidently the stamp for some particular kind or quality of a compound metal, probably pewter as contrasted with a softer quality of the metal.

The box likewise contains a small pewter cup,  $1\frac{3}{4}$  inches high by  $1\frac{1}{2}$  inch broad, with the initials A W scratched on its side. There is also a small squared piece of pewter with a couple of stamps on it, of the castle, and dates 1669 and 1671.

The statement in the MS. paper seems a very extraordinary explanation of the box and its contents, and not a very satisfactory one. The idea of the wild Gipsy Faas of Yetholm carrying about this almost empty box, with its stamped plates of pewter and dates thereon, as their mysterious authority to rove about the country, seems to me too wonderful to be true—at least in the total absence of any apparent evidence to support it. On the other hand, the box, with its rich ornamental iron mountings, as I have said, has a certain official-like character, and with its regular series of stamped impressions and dates on the peculiarly shaped pewter plates, seem to me, in want of a better explanation, much more suggestive of its having been the official record of the trade or assay marks of some

incorporated body of workers in metal, probably pewterers, than anything else.

The pewterers were once a very important body of craftsmen in this country, at a time when almost all the dishes and plates for domestic or table use were made of this mixed metal; and the glory of old kitchens consisted of a bink or rack filled with shining rows of well-polished pewter plates and dishes of various sizes. These, however, are now among the fashions that have passed away, the introduction of earthenware dishes, got at a moderate price, and so much more easily kept clean, having completely taken their place; and the few pewterers now left, carry on a much diminished trade in pewter pots for beer, or measures for the sale of liquors, &c.

The stamp of the castle so exactly resembles the conventional castle, on the shield of the Edinburgh City Arms, that there can be no doubt it represents Edinburgh as the seat of the manufacture of the articles stamped with it. The initials on each side of the castle probably refer to the quarter-master, appointed, I understand, to examine the work, or the official head of the craft. They do not appear to agree with the names of the various Deans of Guild, or the Conveners of the Hammermen, at the corresponding dates, in the lists of these officials given in "The Constitution of the City of Edinburgh—Edinburgh 1826." An examination of the records of the Incorporation of Hammermen might probably throw some light on this matter. The badge of the rose (a small one only occurring on one of the early stamps), which is stamped on the cut portions of pewter plates contained in the box, is not, indeed, part of the coat of arms of our old Edinburgh "Peutherers," at least as given by Alexander Pennecuik in his "Historical Account of the Blue Blanket." These are—"Azure, on a chevron *argent*, betwixt three porteullices *or*, as many thistles *vert* and flowered *gules*." The rose forms part, however, of the armorial bearings of the ancient Pewterers of London, who date their Incorporation from 1482; their armorial ensigns are—*Azure* on a chevron *or*, between three cross bars *argent*, as many roses *gules*; the crest two arms holding a pewter dish proper, the supporters two sea horses *per fesse or* and *argent*. The motto, "*In God is all my trust*." Here, then, we have the roses borne on the shield. The cross bars on this shield correspond to the porteullises of the Scots pewterers, the shape of both is somewhat alike, could there

be no mistake in the reading of the Scottish shield, may it have been formed upon the English shield? Curiously enough, the woodcut of the arms given by N. Bailey in the second volume of his Dictionary, represents these cross bars of a corresponding shape to the pewter plates contained in this box, only broader in proportion. I should, indeed, have rather supposed them to represent three plates of pewter *argent*, the form of the pewter plates of the box being so much like them, that it looks almost as if they might have been copied from the blazonry of the shield. (See N. Bailey's English Dictionary.)

Some time ago I called on Mr Moyes, now almost our only Edinburgh pewterer; he occupies a shop in the Grassmarket, at the foot of the West Bow, where he succeeded, he believes, to several generations of pewterers. I asked him if they used any stamps now, at least with the pattern of a rose on them; he told me they did not use many stamps or dies now (except, perhaps, the Government stamps for measures), but long ago they used various stamps, and he remembered many lying about the shop, which had been mostly thrown aside as useless. He still, however, had a stamp or two, and it was rather interesting to find that one of these consisted of the words SUPERFINE HARD METAL, corresponding to the HARD METAL die stamp in the old oak box, this being distinctive of the finer metal of the pewterers, formed of a larger proportion of tin and less of lead. Other dies consisted of a large Scots thistle displayed, the initials of a previous pewterer, with ED. for Edinburgh; another his full name, William Scott, with a bird perched on the globe, and a flower at each side; while another closely resembled the rose stamps on the pewter plates of the box. He kindly stamped this last die for me on a piece of pewter (and it is now exhibited). (See the annexed figure printed from the die itself.) This stamp of the rose had also the crown above, and to show, perhaps, that it had nothing to do with England, or, at least, to give the correct locality of the place where the article stamped with it was made, it had the name of EDINBURGH cut across it on a ribbon below the rose. In this stamp, then, we have a proof of the rose having been actually used as a dis-



Pewterers' old  
Die Stamp.

tinctive stamp by our Scottish Pewterers, probably, however, only at a comparatively recent date.

Whether this box, with its stamped plates, taken in connection with the rose stamp of the pewterer with its "Edinburgh" inscribed above, may possibly also show that, at the date when these rose stamps were used, some members of the London Incorporation of Pewterers came to settle in Edinburgh, and brought their rose stamps with them, I cannot tell. Had time and health permitted, I intended to have made some search or inquiry into the records of our Edinburgh Hammermen, and especially the Pewterers, to see if they would throw any light on the matter.

All things considered, I have little doubt this box and its contents will be found to be a relic of our Scottish craftsmen. However this may be, I think I have, at least, shown the probability of its being connected with a body of pewterers; and I may also refer to the small cup of pewter in the box, which may have been used for some assay, or other purpose, connected with the process of testing the quality of the metal preparatory to stamping the manufactured articles of pewter.

### III.

NOTICE OF THE CONTENTS OF AN URN FOUND AT MURTHLY, PERTH-SHIRE. BY ARTHUR MITCHELL, M.D., COMMISSIONER IN LUNACY, SEC. S.A. SCOT.

This urn was found last year in the grounds attached to the Asylum at Murthly, and was sent to me by Dr M'Intosh.

*Position.*—It was turned up by the patients while trenching. There was no trace of a cist or any special arrangement of stones or earth about it. Several other urns were found in the grounds of the Asylum in 1863, and these were generally in groups of two or three, but this one was buried alone.

*Character of Urn.*—The urn had fallen to pieces before it reached me, and it has been found impossible to rebuild it; but it can nevertheless be determined that it was not small, that it was of a common pattern and ornamentation, and that it was rudely made of coarse clay.

*Contents.*—These consist entirely of bones, which are human, and



belong to a child. There are only a few fragments which cannot be pronounced to be human, and even these are possibly so. Professor Turner assisted me in this inquiry. The bones present the following characters:—

(a.) They show the usual evidences of having been exposed to the action of fire.

(b.) They are transversely fissured, the fissures being more or less nearly parallel and curved.

(c.) They are bent upon themselves or twisted.

(d.) The long bones are also fractured, like the bones of a kitchen midden.

(e.) The whole skeleton is clearly not in the urn, but there are parts of the head, limbs, vertebral column, and pelvis.

*Special object found in the urn.*—Among the fragments of bone in the urn there was found a piece of worked bone, which appears also to have been exposed to the action of fire, and is twisted and bent on itself, but not fissured. Its shape and full size are shown in the annexed woodcut. It is less than an eighth of an inch in thickness.



So far as I am aware, this is the first instance in which a piece of worked bone has been found in a funereal urn. What use this little bone implement served I cannot tell. It may have been the plaything of the child whose remains were buried in the urn, or a fragment of a bone button.

Bone Object found in Urn.  
(Actual size.)

#### IV.

NOTICE OF CISTS AND URNS RECENTLY FOUND AT ARDOE, NEAR ABERDEEN. IN A LETTER TO JOHN STUART, LL.D., SEC. BY A. OGSTON, ESQ. OF ARDOE.

Mr Ogston encloses a note from Mr Duguid of Auchlanies, who was present at the opening of some of the cists, and adds a few notes himself.

Mr Duguid says : "The cists were discovered in excavating a sandy hillock for the repair of the embankment on the turnpike road.

"I happened to be present only at the opening of the coffin first found ; it was from three to four feet long, and lay north and south. The upper stone was within six inches of the surface, and covered the whole. The sides and ends were rough flat stones, and the bottom was paved with pebbles from the river.

"The coffin was filled with fine sand, which had been run in by water—quite compact and firm. On removing the sand carefully, the skull was found perfect, and the ribs could be distinctly traced, but fell down with the sand when touched. The body had been interred doubled up, lying on the right side, the head nearly north, and slightly bent down towards the chest, facing up the river. There was a slight trace of what might have been the lower limbs in front of the body. There were some fragments of a small urn found in the corner in front of the head.

"The other three coffins, in one of which a skull and thigh bones, with a small urn, were found, were also near the surface, but no doubt they had been all originally placed at some depth, as from the position and the nature of the soil it washes away very readily.

"The larger urns were found embedded in the sand near the coffins, and the probability is that this was the place of interment of some native tribe.

"No arrow-heads (which you know are common in this locality), nor implements or ornaments of any kind, were found.

"The only similar objects of interest found in the immediate vicinity were those at Cults, on the other side of the river, and it would be curious to compare the urns to see if any similarity can be traced between them."

Mr Ogston adds : The find was got on the top of an eminence in a field on the estate of Ardoe, adjoining the river Dee, the situation of which is a most picturesque one, and commands an extensive view. The extent of the excavation is an area of about thirty feet diameter. There were only three urns preserved to me, the others having been broken by the workmen. Of the two urns left, one is about three times larger, the other about one-third less, than the one presented to the Museum. There was also found a small half globular bronze vessel much decayed, but so

entire as to show the original size. The skull, I am told by Dr Ogston, is a large and well-developed one; the bones are those of a large person. These I have sent to the museum at Aberdeen for preservation, as they were much decayed.

## V.

NOTICES OF COINS RECENTLY FOUND IN SCOTLAND. BY GEORGE SIM, ESQ., F.S.A. SCOT., CURATOR OF COINS.

*Discovery of English Coins in Ayrshire.*—About the middle of April last, 216 English silver coins were turned up by a ploughman on the farm of Chapelton, West Kilbride, Ayrshire, on the estate of the Earl of Eglinton. Mr Cunningham, the tenant of the farm, rewarded the finders, and handed the coins to the Earl. Mr Gross, the procurator-fiscal at Kilmar-nock, having noticed in the newspaper an account of the discovery, wrote to the Earl that it was his duty to claim the coins as treasure trove on behalf of the Crown. The Earl at once sent the coins to Mr Gross, who, on the 29th ult., forwarded them to the Exchequer. None of the coins were required for our Museum, being nearly all very common, and few of them well preserved. The Remembrancer, therefore, returned them to the procurator-fiscal, to be restored to the Earl of Eglinton, who had expressed a wish to retain them. The following is a list of the coins, viz. :—

Mary (Tudor) groats, very poor,	. . . . .	2
Elizabeth hammered shillings,	. . . . .	56
Do. do. sixpences,	. . . . .	66
Do. do. groat,	. . . . .	1
James I. "Exurgat" shillings,	. . . . .	10
"Quæ Deus" do.,	. . . . .	20
	—	30
Do. sixpences,	. . . . .	5
Irish shillings,	. . . . .	4
Charles I. halferowns, with varied mint marks, such as star, crown, bell, anchor, tun, triangle, and others,	. . . . .	19
Carry forward,		<hr/> 183

Brought forward,	183
Shillings, with varied mint marks, such as star, Welsh feathers, triangle, anchor, porteullis, tun, harp, bell, eye, crown, and others,	31
Sixpences, mint marks, triangle and star,	2
	<hr/> 216

*Barbreck Treasure Trove.*—Five German dollars were lately found in the parish of Glenorchy and Inishail. They were recovered by the procurator-fiscal at Inveraray, and sent to Exchequer, where I examined them. They are of Hamburg, Mansfeld, Brandenburg, &c., 1620, 1645, &c. Being of no historical interest, I suggested that they might be restored to the finders. The following is a copy of the report of the procurator-fiscal regarding the discovery :—

*“ Copy Report of Procurator-Fiscal at Inveraray as to Coins found  
at Barbreck.*

“ On Saturday, 4th March 1871, while the persons afternamed were engaged planting young trees on the farm of Barbreck, Lochaweside, in the united parish of Glenorchy and Inishail, and county of Argyll, the property of John M'Arthur of Barbreck and Ardmeanach, they found the five coins herewith transmitted. The particular part where they were found was in a brushwood on the face or side of a small hill or “knowe,” called “Dunchoich,” situated about a quarter of a mile to the north-east of North Portsonachan Pier, and about from 50 to 60 yards distant from the north side of Lochawe. The coin first discovered was nearly on the surface of the ground, and the others were found under a stone weighing about one hundredweight. The stone had all the appearance of being long in the water, being round and smooth, and there are no other stones of the same description nearer than the shore of Lochawe, from which it had most probably been taken.

“ There is no appearance of graves or tombs about the place.

“ A sixth coin, similar to the others, was found at the same time and place, but the person who found it has since left the district, taking the coin along with him. It can still be recovered if required.



"The finders of said coins made no secret of the matter, and when asked by the procurator-fiscal on behalf of Her Majesty, at once gave them up of the date hereof.

"The above facts were ascertained on the spot by an examination of the witnesses, who were the persons who found the coins.

(Signed) "DUN. MACLULLICH, *P.-F.*

"INVERARAY, 18th April 1871."

*Remarks on a Small Coin found at Bunes in Shetland.*—At first sight this coin appears to be of copper, but, on closer examination, it is found to be of very base silver. Its weight is nearly 17 grains.

The obverse of the coin has an open crown in the field with the legend "AQUINUS REX." The reverse has "A." in the field, with legend "MONETA OSLO."

This is a coin of Hakon or Haaken V. (Magnussön) King of Norway, who reigned from 1299 to 1319. It bears to be struck at the mint of Osloe (sometimes spelt Asloe), which was the ancient capital of Norway, and stood close by the more modern Christiania.

I am indebted to Mr John Evans for information as to which of the kings of the name of "Aquinus" or Hakon the coin belongs, and he states that it is engraved in Schive and Holmboe's *Norges Munter*, Plate xi. No. 5.

*Remarks on Pennies of Alexander III. of Scotland, presented by David Grieve, Esq., F.S.A. Scot.*—These pennies belong to an early coinage of Alexander III. of Scotland, from the mint of Aberdeen, and are mostly, if not all, from the same die. The best preserved weigh 21 grains, several of them about 20 grains, and a few are lighter. The obverse of the coin presents a crowned head to the left (of spectator), with a sceptre in front, "ALEXANDER REX," reverse "ION. ON. ABERD."

Long double cross, with mullets of six points in the angles.

Coins of Alexander III. of this mint were formerly known, but this is an unpublished variety as regards the name of the moneyer. They are evidently from the same hoard.

## VI.

NOTICES REGARDING THE ANTIQUITIES OF CULLEN, IN BANFFSHIRE—ITS CASTLE HILL, AND PARISH CHURCH, ETC. BY ANDREW JERVISE, Esq., F.S.A. SCOT., BRECHIN.

As the town and parish of Cullen contain some interesting remains, both of their ancient ecclesiastical and civil importance, and believing that some notes regarding these, and their history, so far as can be ascertained, may not be unacceptable to the Members of the Society, the following notes have been thrown together for their consideration:—

The most remarkable topographical features of the district are the Castle Hill, and the singularly beautiful and romantic situation of the parish church, and Cullen House. The two last-named objects adjoin each other, and occupy a corner or elbow of land, overlooking the burn of Cullen. Possibly the name of the district had originated from this circumstance, since the Gaelic words *Cul-a'en* are descriptive of the site. Or it may have been from two pretty similar words which are applied to places that abound in hazel or holly bushes. Of hazel there is no lack in the locality, nor is it destitute of the holly.

From the Castle-hill, which is conical in form, and about two hundred feet above sea-level, fine views of the hills of Sutherland and Caithness are obtained, as well as of the old royal hunting fields of the Boyne and the Enzie. Indeed, the hill may be said to be in the midst of these forests; and the Seatown of Cullen, which lies under the shadow of the hill, is built along the margin of a nicely sheltered bay.

Taking into account the commanding position of the Castle-hill, its proximity to the sea and to the neighbouring forests, few places could have been better suited for the abode of our ancient kings or chieftains than Cullen.

As in similar cases the town of Cullen had risen under the influence of the old lords of the district; and although there was a stronghold or fort upon the hill at a remote date, no record or tradition either of it or its occupiers have come down to us prior to the eleventh century. The ditches and trenches are still pretty entire; and although traces of the old masonry are slender, enough remains to show that the fort had been

of a somewhat similar construction to the castles of Kinedard (King Edward) and Elgin, &c., which were both occupied by King Edward in 1296.

Modern additions, in the shape of seats or benches, have been incorporated with the old walls; and the spot has been made the depository of fragments of carved stones. One piece exhibits the Virgin and the Infant Jesus—the cognizance of the burgh; another (possibly the head of the cross of the old town of Cullen), shows a unicorn resting one paw upon a scroll; upon the front of the scroll are W. M. in monogram, probably the initials of William and Mary of Orange. Other slabs bear (1), the royal arms of Scotland, France, and Ireland, with the usual supporters, &c.; (2), the Sinclair; (3), the Ogilvy; and (4), the Baird coats. A fifth slab is dated 1688, and initialed M. P. O., D. E. P. It is just possible that these fragments, or some of them at least, had ornamented the tolbooth, or town-house, which, along with the cross, stood about the middle of the old town of Cullen, near the church,<sup>1</sup> and had been rescued at the time the old town was removed to the sea side. It is certain that the kirk bell, which is inscribed, “CULLEN, IN THE COUNTY OF BANFF, 1752,” was at one time upon the old town-house.

The earliest historical incident regarding Cullen is that of the landing of the Danes and Norwegians, their defeat by King Indulf, his slaughter by a band of Northmen who escaped from the field of battle, and his burial, first at Cullen, then at Iona, as told by Boethius,<sup>2</sup> and repeated by subsequent writers. But, according to St Berchan, who is accounted a more trustworthy historian, Indulf, who succeeded his father as King of the Picts in the year 954, expired quietly, after a reign of eight or nine years, at St Andrews, “in the house of the same pure apostle where his father died.”<sup>3</sup>

According to local tradition, three kings fell in the engagement referred to, and one was buried at the foot of each of three isolated rocks on the sea beach of Cullen, not far from the site of the ancient Church of the Blessed Virgin at Farskan. These rocks are known as the *Three Kings of Cullen*, a name which had more probably arisen from the

<sup>1</sup> Antiq. of Abd. and Banff, ii. 136.

<sup>2</sup> Scot. Historie, lib. x. fol. cccxviii. (orig. edit., 1526).

<sup>3</sup> Skene's Chrons. of the Picts and Scots, p. cxlii.

similarity of the name of *Cullen* to *Cologne*, in Prussia, of the cathedral of which city the Three Kings were patrons, than from the rocks having been the burial-places of the royal personages referred to by tradition.

As a town and burgh, Cullen has claim to considerable antiquity. As far back as 1198-99, King William the Lion granted a toft in the *burgh* of Invercullan to Richard, Bishop of Moray.<sup>1</sup>

Whether King William ever abode at Cullen is uncertain; but from at least two of the charters of his successor having been granted "apud Innerculen," and attested by his officers of state, there is little doubt but Alexander II. and his court were there on 3d January 1226, and on 5th and 7th October 1232.<sup>2</sup> It was soon after the first of these dates that Alexander made over a portion of the territory in the forest of Invercullan to the Bishop and Chapter of Moray.<sup>3</sup>

It also appears that in 1264, R. de Strathewan, sheriff of Banff, expended, on the king's behalf, a certain sum of money on the repair of the house, &c., of "Innerculan."<sup>4</sup> And it is not the least interesting fact to know, that after the unfortunate death of Alexander III., when the Abbot of Welbec and Henry of Rye went to Norway by order of King Edward in 1290, they stopped at "Colane" upon the 15th of October, and incurred 3s. 3d. of expenses there.<sup>5</sup> Cullen is also mentioned in connection with the disasters that befel Scotland upon the death of "the Maiden of Norway," in so far as King Edward, when on his subjugating tour through the kingdom in 1296, passed from the castle of Banff to the manor of Cullen, on Monday, 23d July, where he abode for the night.<sup>6</sup>

But it is not easy to determine whether King Alexander and King Edward dwelt in the castle which stood upon the summit of the hill, or in an old residence, which is said to have been near the present site of Cullen House. Most probably it was within the castle.

The cause of Edward's stay at Cullen is well known, and Kings Alexander II. and III., had possibly been attracted to the district from the rich sport which was afforded by the surrounding forests. The fame of these was carried across the border by Hardyng the Chronicler, who, in his report upon the state of Scotland to Edward IV., held out the rich-

<sup>1</sup> Reg. Ep. Moraviensis, p. 11.

<sup>3</sup> Ibid., 31.

<sup>5</sup> Stevenson's Hist. Docts. (Scot.), i. 184.

<sup>2</sup> Ibid., 28, 123.

<sup>4</sup> Chamb. Rolls, i. p. 14.

<sup>6</sup> Ibid., ii. 29.



ness of the forests of "Boyne and Hayng, on the Este see coste,"<sup>1</sup> in that particular, as an inducement for Edward to invade the kingdom.

Of the keeper, or constableness of the Castle of Cullen, I have seen no mention until the time of David II., when it was held by Thomas Lipp, who also held certain lands in Banffshire, possibly in virtue of his office. During the same reign the lands of Castlefield—apparently the field in which the Castlehill is situated—were in the hands of various persons and at different times; among others, Henry Culane,<sup>2</sup> who, being a vassal of the overlord, had likely assumed, as was then the custom, his surname from his possession.

As before remarked, the old town or burgh of Cullen stood near the church. No trace of it now exists. It was "pitifullie" plundered by Montrose's soldiers in February 1645, owing, doubtless, to Lord Findlater being "a grite covenantar," and in May thereafter it was "brynt wp." The place of Cullen of Boyne was also plundered by Montrose on the first occasion; and, but for the payment of 5000 merks and the entreaties of Lady Findlater (her husband "haueing fled south," and left her to the tender mercies of the insurgents!) "the place" would have been subjected to the same fate.<sup>3</sup>

The House of Cullen has been recently repaired and enlarged at a great expense by the Earl of Seafield. Upon the older portion of the building are some half-obliterated carvings of armorial bearings. The oldest of these exhibits the initials, S. V. O. and D. M. D. These seem to refer to Sir Walter Ogilvy of Findlater and his second wife, Mary Douglas, of the house of Morton; and proves that Sir Walter, who was created Earl of Deskford in 1616, had erected the oldest existing portion of Cullen House sometime before he was ennobled.

Upon later parts of the house are the arms of the Stewarts of Lorne and the Meldrums, with the names of "DAVID STEWART & MARY MELDRUM." Other carvings, such as those of the theological virtues of Faith, Hope, and Charity, are represented with their ordinary accompaniments and legends, as noticed in *Proceedings*, vol. iv., p. 588.

Close to the mansion-house stands the

<sup>1</sup> Gough's *Brit. Topog.*, ii. 581; Sibbald's *Chronicle of Scottish Poetry*, i. 465.

<sup>2</sup> Robertson's *Index*, pp. 32, 37.

<sup>3</sup> Spalding's *Troubles*, ii. 450, 451.

## CHURCH OF CULLEN,

which was "a chapel" in 1236.<sup>1</sup> It is said to have remained in that condition, and to have been dependent upon the kirk of Fordyce until 1616, when the district was made into a separate parish, possibly by the Earl of Deskford.

The church or chapel of Invercullen is commonly said to have been founded by Robert the Bruce; but the above reference shows that it existed long before Bruce was born. It is further said (possibly with truth, for I have seen no record to the contrary), that Bruce's "Queen Elizabeth's bowels" were buried at Cullen,<sup>2</sup> she having died there, probably when on her way from the shrine of St Duthac at Tain; and that for praying for her soul the king endowed a chaplaincy in the church of St Mary of Cullen. Fordun makes no mention of the queen having died at Cullen, but says that her body was laid in the choir of the kirk of Dunfermline, where that of the king was subsequently buried.<sup>3</sup>

As it now stands, the church of Cullen is cruciform in shape. It has been frequently added to and altered. The oldest portions are the south aisle, and the east end, the latter of which, from the armorial bearings, &c., upon the outer wall, and the old monument inside, had probably been erected by Alexander Ogilvy, who died in 1554, and his lady, Elizabeth Gordon.

Besides the chapel or church of Cullen, which was dedicated to the Blessed Virgin, there was a chaplaincy within it dedicated to St Ann. The fact of the existence of this foundation, as well as the name of the founder, and a variety of other interesting particulars connected with it, are recorded by contemporary inscriptions cut upon different parts of the south aisle.

The first quoted inscription is from the arch of a recess tomb on the west side of the aisle. It is carved in raised and prettily formed capitals, and accompanied by a craftsman's mark. The mark (here represented) is three times repeated upon the aisle :—

<sup>1</sup> Reg. Ep. Morav., 21.

<sup>2</sup> Coll. Abdn. and Banff, i. 210; Old Stat. Acct., xii. 153.

<sup>3</sup> Scotichron., ii. 238.

IHON . HAY . LORD . OF . FORESTBOÑ . AŽE . & . TOLIBOVIL .  
 GVDSIR . TO . ELEN . HAY . Y<sup>T</sup> . BIGIT . YIS . ILE . LEFT . A . CHAPLARI .  
 HEIR . TO . SING . PERSONALI . OF . HIS . LĀDIS . OF . ORDIHVF .



*Forestboñ*, *Aže*, and *Tolibovil*, mentioned in the above inscription, appear to have reference, the first to the Forest of Boyne (? *Abhan*, a place abounding in streams), which lay between Banff and Portsoy; the second, to the Enzie (? *Eanach*, a marshy district), between Cullen and Fochabers; and the third, to Tilibody (? *Tily-bo-dubh*, the cow's black hill) in Clackmannanshire. These points are proved by the fact that when Alexander Seton of Gordon (first Earl of Huntly) married the heiress of Sir John Hay of Tilibody, he received along with his wife the lands of Tilibody, also those of the Anzie, or Enzie, and the Boyne in Banffshire.<sup>1</sup>

The first of the Hays who held property in this quarter appears to have been John of Tolyboyll, who, by charter dated at Aberdeen, on 16th January 1362, received the whole lands from the water of Spey to the burn of Tynot, which are described as lying in the forest of Aunie. It was probably John's son, David Hay, who, about 1390–1406, had a charter from Robert III. of "the place of Cullen."<sup>2</sup>

The next quoted inscription not only presents the important and interesting facts of the name of the chaplainry, the extent of the gift, and the services required, but also the names of the founder of the chaplainry and the persons to be prayed for, together with those in whom the patronage of the living was to be vested after the decease of the heirs of the donor. It is carved round the arch of the large window of the south aisle, in the same style as the above inscription:—

SANT · ANIS · CHAPLAN · HEIR · DOTAT · Y<sup>T</sup> · 35 (?) · ACRE · GVD ·  
 CROFT · LĀD · IN · CULĀ · & · TENEMENTIS · SAL · BE · A' · GVDE · SINGAR ·  
 OF · HALI · LIF · BVT · ODIR · SERVICE · & · DAELI · RESIDENT · TO ·  
 PRAIE · FOR · ELEN · HAY · & · HIR · BARNIS · HIS · FYIV · DÖRS · AT ·  
 GIFT · OF · ION · DVF · & · HIS · ARIS · OF · MADAVAT · & · FALING ·  
 YAROF · AT · GIFT · OF · YE · BALZEIS · AND · CÖMVNITIE · OF · COLĀ ·

<sup>1</sup> Douglas' Bar., p. 167.

<sup>2</sup> Reg. Mag. Sigill., p. 24; Robertson's Index, p. 141.

The words—PER · ELENA · HAY—are carved upon the lower side of one of the stones of the arch of the south window. Upon the west side of the arch is this notice of the building of the aisle :—

· · · · · ELENGE · HAY · IÖN · DVFFIS · MODR · OF · MALDAVAT ·  
YAT · MAID · YIS · ISLE · YE · CHAPLANRI · · · · ·

The two inscriptions last quoted prove an early marriage between the Hays and the Duffs, and also show that Elen Hay was the mother of John Duff of Muldavit, who died in 1404, to whom, until 1792, there was a recumbent effigy in the recess tomb, in the south aisle, at Cullen, also an inscribed slab with a rudely engraved figure in armour. These monuments, which are both engraved (but not very accurately) in Cordiner's valuable work on the "Remarkable Ruins of the North of Scotland," are now within the mausoleum of the Earls of Fife, near Banff.

The entrance to the south aisle, or St Ann's Chapel, at Cullen, is composed of an arch, supported by pilasters, with plain capitals. Below the capital of the west pilaster are the words—

ME · MËTO · MORI ·

upon the east—

DISCE · MORI ·

The last motto is followed by two interesting particulars, viz., the name of the builder of the aisle, and his craftsman's mark—

ROBERT · MOIR · MASON ·



It would be interesting to know who this Robert Moir was. He certainly was no "cowan," for possibly no better contemporary specimens of lettering or ashler work exist in any part of Scotland than in the aisle at Cullen. Possibly some of the members of the Architectural Institute may be able to throw light upon Moir's history.

Upon the outside of the aisle, one corner stone bears—

PER · ELENA · HAY

Another—

SOLI · DEO · HONOR · ET · GLORIA ·



The next oldest portion of this interesting fabric is the east end. As to the age of this there is also good data, for it appears that about 1543, the church of St Mary of Cullen was converted into a college by Alexander Ogilvy of Deskford and Findlater, for the accommodation and maintenance of a provost, six prebends, and two singing boys.<sup>1</sup> It is also probable that the Bede-house, which was erected for the support of a certain number of decayed men and women, had been founded by the same individual. The Bede-house stood originally in the old town of Cullen; but, since the removal of the town to the sea-side, "the house" has been done away with, and the charities given to out-door pensioners.

A richly decorated monument, in the Perpendicular style, with canopy, is in the north-east wall of the church. It reaches from the floor to the ceiling, and consists of an arched recess projecting from the wall, enclosing the tomb on three sides. The lower portion is formed of eight panels, each being filled with a figure attired in a hood and long robe, with book in hand. These are popularly believed to represent the "eight innocent boys," for whom, as the following inscription from the tomb shows, Ogilvy and his lady founded the asylum:—

corp̄s . alexr . ogilvy . de . findlater . h̄eros ,  
 . . ac . spons̄e . elizabeth . gordon . b̄t̄r̄m̄q' . c̄bbat .  
 preside . p̄bris . b̄ister . p̄berisq' . d̄uob̄bs .  
 . . h̄as . iacint . edes . ib̄ct̄bs . b̄terq' . p̄ib̄s .  
 migrabiit . et . h̄ac . l̄cce . h̄ic . die . 4 . m̄ens . īblii  
 1554 : illu . die . ——— m̄sis ——— 155—

A stone effigy of Ogilvy lies upon the top, and the above lines are from a slab in the back of the tomb. The lines are surrounded by the Ogilvy and Gordon arms, and a variety of curious and elaborate carving. As a whole, this is possibly one of the finest sepulchral monuments in the north of Scotland; but, so far as I know, no really good drawing of it has yet been executed, that by Cordiner, though very creditable for the time, is not so correct as could be wished.<sup>2</sup>

<sup>1</sup> Coll. Aberd. and Banff, i. 210; Antiquities of Aberd. and Banff, ii. 135-42.

<sup>2</sup> Remarkable Ruins.

Ogilvy, in all probability, predeceased Elizabeth Gordon, who was his second wife. The portion of the church in which the monument stands may also have been built by them, for in 1863, when alterations were being made upon that part of the church, a stone awmbry and altar-piece were found in fine preservation. These were from 5 to 6 feet in height, embellished with the representation of two angels raising the host, and other ornaments; also these texts (John vi. 54-6), below the cornice :—

CARO · MEA · VERE · EST · CIB' · ET · SANGVIS · ME'  
 VERE · E · POT' · Q' · MĀDVCAṬ · MEĀ · CARNE  
 T · BIBIT · MEV · SĀGVINĒ · VIVET · I · ETERNV ·

The awmbry and altar-piece were unfortunately reconsigned from view; but a description and an engraving were published in the "Banffshire Journal."<sup>1</sup> These relics were of much the same design, and possibly the handiwork of the same craftsman as the "Sacrament table" in the old kirk of Deskford, which bears to have been erected by Alexander Ogilvy and his second wife, Elizabeth Gordon.

By his second wife, a niece of the second Earl of Huntly, he left no son; but by his first wife, a daughter of Lord Saltoun, he had James Ogilvy of Cardell, in Inverness-shire, who, by becoming a steward in the household of Queen Mary in France, offended his father so much that he disinherited him, and settled his estates upon Sir John Gordon, then an infant, and second son of the fourth Earl of Huntly.

This proceeding gave rise to a long and bloody contest between the Ogilvies and the Gordons, and may be said to have been the more immediate cause of the battle of Corrichie, in which Huntly was slain, and his son Sir John taken prisoner and executed. After this the matter was left to arbitration, when Adam Gordon was awarded the lands of Auchendoun and Keithmore, and James Ogilvy those of Deskford and Findlater, &c.<sup>2</sup>

It was James Ogilvy's grandson, Sir Walter, who was created Lord Ogilvy of Deskford; and in his son, who acquired the title of the Earl of Findlater, the direct male line of the original Ogilvys of Deskford

<sup>1</sup> October 15, 1863.

<sup>2</sup> Douglas's Peerage, i. 581.

failed, his eldest daughter having brought the title and estates to her kinsman and husband, Sir Patrick Ogilvy of Inchmartin.

Apart from the superb monument to the founder of the provostry, there are others at Cullen, in marble, to some of his successors. Being more modern, the inscriptions need not be given here, particularly as they are intended to appear elsewhere.<sup>1</sup>

It need only be added, that the most elaborate and interesting of these is the monument to Sir Patrick Ogilvy's grandson, James, fourth Earl of Findlater, who did so much to bring about The Union of Scotland and England, an event which, in whatever light it may have been looked upon at the period of its consummation, must now be viewed by the natives of both nations as the greatest blessing that ever came over them. Lord Findlater was then chancellor of Scotland, and it is told that when the Parliament of that nation rose for the last time, he exclaimed in the house, "Now, there's the end of an auld sang!" As a sequel to this particular, it may be added that the Earl's younger brother, the Hon. Patrick Ogilvy of Inchmartin, eked out a living by dealing in cattle; and that his Lordship, conceiving this an *infra dig.* occupation for a gentleman of good birth, sharply reproved Patrick one day; and Patrick, being no friend to the Union, is said to have silenced his brother by gruffly remarking, "Better sell nowt, than sell nations!"

## VII.

NOTES OF SOME RECENT EXCAVATIONS IN THE ISLAND OF UNST, SHETLAND, AND OF THE COLLECTION OF STONE VESSELS, IMPLEMENTS, ETC., THUS OBTAINED FOR THE SOCIETY'S MUSEUM. BY THOMAS EDMONSTON OF BUNESS, ESQ., UNST, SHETLAND.

At Norwick, situated on the most northern open bay—as its name implies—in the furthest north island in Great Britain, there seems to have been from the remotest times a not inconsiderable population; and, indeed, the whole island of Unst, its shores, hills, and valleys, are yet

<sup>1</sup> These inscriptions will appear, along with a selection from those in the churchyard of Cullen, &c., in a book upon Epitaphs and Inscriptions in the North-East of Scotland, now in the press, by the writer of this paper.

dotted with unmistakable evidences of the former dwellings and enclosures of the early inhabitants.

On the south side of what may be termed the village of Norwick is an ancient burial-place, which, by the accumulation of centuries, has been raised up in a mound of rounded shape. In the centre of this, some kind of building (in all probability a place for worship) has existed, the foundation-stones of which still remain, and the arched doorway in the gable (east), some twelve feet high, was standing until a comparatively late period, when, as I am informed, it was overthrown by one of the heavy gales so frequent in these northern latitudes. Due north of this place, and about a quarter of a mile distant, are the almost obliterated traces of another erection of apparently great antiquity, termed by the inhabitants "*Bardle's Kirk*," erected, as the local tradition has it, in honour of St Bartholomew. There is not now sufficient of the building standing to enable us to decide with any certainty as to its size or nature, but that the interior and its surroundings were used for purposes of sepulture is undoubted from the urns, &c., that have been dug up, and which are now in possession of the Society. Four large and two smaller stones are still standing, for the erection of which tradition does not presume to suggest a date. The first four of these stones are 8 feet in length and 2 feet 10 inches in girth, the two last 6 feet 6 inches and 5 feet 2 inches each in length, and of the same girth as the former. Situated west of the lower of the two stones are two smaller ones, which appear to mark a grave. By excavation at this place the following relics have been discovered:—1st, An entire stone vessel or urn; one large urn, with fractured section; one large rubbing stone, deeply hollowed at one end, measuring 3 feet 7 inches in length by 2 feet 7 inches in breadth, and weighing between one and two hundred-weight; two celts, one of which is hollowed out at one end to fit the thumb and forefingers, so as to afford a firm hold. Scattered through all the ground outside the four largest stones, and at a depth of three to five feet, are numerous fragments of broken vessels, &c. There are also numerous stones, many of them large, and of a different kind from those peculiar to the locality, and which must therefore have been brought from a distance. All the space between the four large stones, as noticed before, has not yet been examined, as to do so thoroughly



will involve the expenditure of a great deal of time and labour. Interesting results may be anticipated from a further examination of this spot. This is the more likely, as these stones have not been used to support any superstructure, and also from the fact that pieces of broken urns of steatite have been found here, containing what was believed to be human ashes.

About 300 yards north-west of "*Bardle's Kirk*" is another place called "*Fustric's Knowe*." This is a high mound of decayed sandstone, also formerly used as a burial-place. Here some forty years ago the crofter, whilst delving about and around the mound, came, to his surprise, upon some thirty urns of different sizes and shapes, standing in rows; but as little or no interest was then taken in such relics, they have unfortunately been totally lost. At *Valsgarth*, a small collection of thatched cottages, situate about half a mile south-west from Norwick, is another mound, called by the natives "*Runie*" of *Valsgarth*, from the Norwegian word "*rune*," a heap or pile—a burial-place of great antiquity. Many large stones here show themselves above ground at intervals, which must have been so arranged by human hands in ages gone by. In the centre of these stones, some years ago, was laid bare the remains of a building that seemed to have been built square, and within was found the large stone vessel or urn, with the lid now exhibited. At the same time were found many pieces of urns of steatite, well made, but so thin and brittle that they crumbled at the touch. This place has been filled up and cultivated, but might be re-opened and more thoroughly examined.

Tourie, as its name implies, is a small hillock of apparently similar character, and has not been examined, but a knife-like stone and a steatite utensil with a hole in the bottom, have been taken from it.

"*Cross-Kirk*," due east from "*Valsgarth Runi*" about a quarter of a mile, is also interesting from the fact that old coins have often been found at and about it, although I have not been able to secure any of them. Tradition informs us that "once upon a time," a ship was labouring in a heavy sea and in imminent peril. The sailors in their extremity vowed to the Almighty that, if safely brought to land, they would build a place for his worship as near as possible to the place where they reached the shore. Hence this building, formerly called "*Santa Cross*." Its narrow aisles have never been explored.

Clisboe is a farm some 200 yards or thereabout from Valsgarth, where are some half-dozen places near each other, which have been used for burying the dead. A great quantity of small stones and earth are heaped up, forming mounds varying from four to six feet in height, and generally of an oval shape. Some of these mounds have been uncovered, but several of them have not as yet been touched. In those that have been examined, on the removal of the covering of earth and stones, large stones are seen beneath. Further search requires the exercise of great caution, as in using pick or spade the workman is apt to destroy the urns or other relics. At this place the graves are indicated by four and sometimes two large stones, about  $2\frac{1}{2}$  feet long and 2 feet broad. On a flat stone lying at the bottom, the urn, containing what is supposed to be human ashes, is placed, as also stone implements, rounded pieces of quartz, horses' teeth, and small pieces of charcoal. Often there are no stones set up to indicate the deposits, and no urns are to be found, but at a depth of four, six, or seven feet, resting on a flat stone, is found what appears to be burned bones, &c., with some of the before-mentioned articles, all covered in by another large flat stone. All the human remains found at Clisboe seem to have been deposited at a time when burning the dead body was the custom. Many pieces of broken urns, celts, &c., are found dispersed through the mounds.

Underground buildings have been found at Haroldswick and in the neighbourhood, and have been partially examined before now. It is, however, more than likely that patient labour would yet bring to light many relics.

At *Houlland*, the residence of Mr William Hamilton, was found the stone ladle now presented. This place is on the borders of the Loch of Cliff in a central part of the island, and an extensive peat moss adjoins. The ladle was dug up from the moss at a depth of some five feet. A larger one with a longer handle, found in the same place, has since been presented by the Rev. Z. M. Hamilton, D.D.

I trust that the Society will be satisfied with the result of my exertions in applying the sum placed at my disposal. Before closing, I feel it but common justice to acknowledge my indebtedness to Mr James Hay, a resident in Haroldswick. The intelligent interest he takes in antiquarian research induced him to make explorations, and to bring under my notice

these interesting relics; and it is information supplied by him that has enabled me to draw up this short and imperfect sketch of his discoveries. Should the Society deem it expedient further to investigate the places Mr Hay suggests as likely to prove productive of interesting results, it will afford me great pleasure in any way to assist in bringing the researches to a successful issue.

### VIII.

#### NOTICE OF A VERY RARE TYPE OF THE HALF-PLACK OF JAMES VI.

By R. W. COCHRAN PATRICK, B.A. EDIN., LL.B. CANTAB., F.S.A. SCOT.

By an Act of the Scots Parliament in 1584, it was decreed that "all the twelff pennie piecis babeis and plakis now current suld be brocht in to the cunzey house (not being fals or counterfitt) and brokin doune with all guidlie diligence and thairof new money to be cunzeit of thrie pennie fyne in grottis at aucht pennies the pice and half grottis at four pennies with twa granis of remede of fynes alsweill abone as under."<sup>1</sup> Referring to this Act, Mr Lindsay, in his "View of the Billon and Copper Coinage of Scotland,"<sup>2</sup> remarks that this coinage differs from that struck in the earlier part of James' reign, in that the later one is much finer; but he adds, that unless the hardhead with the Scottish arms on the reverse be the half groat referred to, no specimen of it is now known to exist. He proceeds further on to show that this is extremely improbable, as the half groat was to be like the groat of three pennies fine, while the hardhead is only one penny fine.

At p. 287 in the Advertisement, he notes the discovery of a half groat (or plack), which is figured in plate 17, 45.<sup>3</sup> This specimen weighs 11½ grains, and presents on the obverse the arms of Scotland, crowned, with the legend IACOB. 6 G. R. SCO: reverse, thistle, crowned, with the legend OPPID. EDIN.

In the first supplement (1859),<sup>4</sup> he states, that of the half plack hitherto considered unique, at least two specimens are known to exist, and another engraving of one is given in plate iii., fig. 11,<sup>5</sup> which also weighs 11½

<sup>1</sup> Lindsay, vol. i. pp. 185, 186, and 242.

<sup>2</sup> Ibid., p. 186.

<sup>3</sup> Ibid., p. 283, No. 45.

<sup>4</sup> Ibid., p. 28.

<sup>5</sup> Ibid., 32, No. 60.

grains, but presents little difference from the one given in the original work.

Mr Wingate, in his recent catalogue of Scottish coins, says, that the half-plack is "extremely rare," and only gives in his plates (38, fig. 10) one type, which is that already given by Lindsay.<sup>1</sup>

The coin in the author's cabinet presents important differences in the legend, both on the obverse and reverse; reading in the one case *IACOBVS REX SCOTOR*, and in the other *I. . OPPIDVM . . . EDINBURGI*. It weighs 11 grains, and is in a fair state of preservation. It is believed to be hitherto unpublished. (A sketch of it was exhibited.)

## IX.

NOTES ON ANCIENT PIPE-HEADS—"ELFIN PIPES." By W. G. GIBSON,  
ESQ. COMMUNICATED BY JOHN STUART, ESQ., LL.D., SECRETARY.

In various parts of England, Ireland, and Scotland, specimens of ancient pipe-heads have been discovered, duly chronicled, and sent to museums.

These ancient pipes are known to antiquarians as Celtic, Elfin, or Danes' pipes, and are supposed to belong to an era long prior to that of Sir Walter Raleigh and the maiden Queen, or of the royal author of a Counterblast to Tobacco.

The places where some of them have been discovered, and the objects found in connection with them, would seem to lead to such a conclusion, but as we have many instances of modern articles being found among more ancient relics, it would be well, in such cases, not to form too hasty an opinion.

Here are one or two examples—

The ancient cemetery at North Berwick is in the vicinity of a small Romanesque building of the twelfth century, and close upon the sea-shore. Within the last fifty years the sea has made great encroachments, carrying off a considerable part of the ruins, and exposing the skeletons of the old

<sup>1</sup> Lindsay, vol. i. p. 111.



tenants of the cemetery, along with many interesting relics, Elfin pipes, &c., of former generations, at almost every spring tide.

In the Statistical Account of Scotland, numerous instances of the finding of ancient pipe-heads occur.

Thus, many of the ancient British encampments appear in the parish of Kirkmichael, Dumfriesshire. Upon some of these being opened, ashes have been found, with querns or hand-mills, and in one upon the farm of Gillrig, a basket-hilted sword was found, and quantities of ancient pipe-heads, small at the top, and swelled in the middle. Again,

Till lately, one of these remarkable monuments of antiquity, called "standing stones," existed at Cairney Mount, parish of Carluke, Lanarkshire, but the hope of finding treasure induced some rude hands to destroy it. It is supposed to have stood at the side of the Roman road passing from Lanark across the Bridge of the Mouse, beneath the Cartland Crag. A celt or stone-hatchet, Elfin bolts, flint and bone arrow-heads, and numerous Elfin pipe-heads, with coins of the Edwards, and of later dates, were found near the stone.

In the Museum of the Scottish Antiquaries, there is a curious collection of Elfin pipes from all parts of Scotland. A great variety of the same objects, found in Ireland, are figured in the third volume of the *Dublin Penny Magazine*.

In the gardens in and about Dumfries, these Elfin pipes are frequently found, and from the academy to the new bridge, which formed the Castle Gardens, they are to be found in every spadeful turned over; the great thickness of the clay accounting for their preservation.

In excavating for the foundation of the Greyfriars' church, Dumfries, built on or about the site of the old castle, at the depth of four feet, among rich black garden mould, mixed with bones of animals, crockery, oyster-shells, &c., 138 of these pipes were picked up. Out of these 138, there were five different forms, each marked with the initials or private mark of the manufacturers. One marked J. C. G. seems to have been the favourite, as it is in the proportion of ten to one. Only one had part of the shank attached, which I have pieced, and from the taper of the stem it may be taken as the average length. I may also mention that, in the same ground, bodles of Charles I. and II. are found in numbers; and, as a proof of what I have before mentioned, that modern articles

are often found along with those of a more ancient date, one of the workmen brought me a large piece of coin which he had just picked up at the bottom of the excavation for the steeple, which, on cleaning, proved to be a coronation medal of Victoria, to the no small consternation of the man who insisted that it was an ancient Roman coin, and would scarcely believe the contrary even after reading the inscription with his own eyes. This medal had no doubt slipped down from the top.

If I might venture an opinion, it is, that these Elfin pipes *are not* so ancient as supposed by some antiquaries, but are the pipes which were generally used after the introduction of tobacco, when that weed was an expensive luxury.

Tobacco, as is well known, was first discovered in St Domingo in 1496; afterwards by the Spaniards in Yucatan in 1520; introduced into France by Nicol in 1560; first brought to England in 1583; prohibited to be planted here in 1624; a tax of 6s. 8d. per lb. laid on it in 1685.

The specimens of pipes found in the castle gardens, one of which is before you, were smoked by the soldiers who garrisoned the castle 200 years ago, and from the great number found, and the marks of five different makers, we may reasonably infer that smoking was very general at that early period. This opinion is strengthened by various extracts in Mr M'Dowall's valuable History of Dumfries, from which we find that the civic authorities indulged in the weed.

Thus, in the treasury account, under date 9th January 1669, the following entry occurs:—"Dew by the Majestraits in company with Sir Robert Dalzell, Patrick Nisbet, Robert Moorhead, and Birkhill, with several other gentlemen, the haill Majestraits being present with several of the Council at the admitting of the said Patrick Nisbet, Burgess, twelf pynts seek quhereoff there was 4 oz. of suggar to ilk pynt of eleven of the said pynts, and the either but (without) suggar, with twa shortbreid, and 3/ shillings for tobacco and pipes."

Mrs Rome, who kept the town tavern in 1687, charged the subjoined account against the council:—

"Spent with Lieutenant-Colonel Windram, Capt. Strauchane, Capt. Bruce, Lieut. Lawder and Livingstone, 6 pynts wine, with tobacco and pipes, £6, 9s. 4d."

Again, "29 May 1672, at the bonfires with Carnselloch, Alex. Douglas

of Penzerie, Mr John Crichton, and the Clerk, 3 chopins wine, and that night with Mr Cairncross the curate, Mr Mair and his wife, three chopins of wine, and 1/8 for tobacco and pipes."

[In the Proceedings, vol. i. p. 182, there is a notice by Dr Daniel Wilson of the discovery of these Elfin pipes at Bonnington, near Edinburgh, associated with a quantity of bodles or placks of James VI., which, as Dr Wilson believed, gave a trustworthy clue to the date of this class of minor antiquities. The subject has been followed out by Dr Wilson in a series of papers on the "Narcotic Usages and Superstitions of the Old and New World," in the Canadian Journal, 1857. Mr Carruthers, however, in his "Highland Note Book" (p. 154), mentions that on a carved stone chimney-piece in Cawdor Castle, Nairnshire, with family arms and groups of grotesque figures, and engraved with the date 1510, there is a rude representation of a fox smoking a tobacco-pipe. Mr Carruthers adds that it is generally believed that tobacco was introduced into England about 1585, and that it is interesting to find such a representation of an earlier date.—EDS.]

## X.

NOTICE OF AN ANCIENT STRUCTURE NEAR GLENALMOND. BY THE  
REV. J. HANNAH, D.D., VICAR OF BRIGHTON, F.S.A. SCOT.

I forward a ground-plan and sketch of a small ancient structure in the immediate neighbourhood of Glenalmond, the sketch having been taken by Miss E. Mackenzie, Edinburgh. It is situated on a high bank at the right (or eastern) side of the Campsie burn, which falls into the river Almond from the southern side, a few hundred yards to the east of Trinity College. The site of the building is about 120 feet above the river bed, which is, at this point, 400 feet above the level of the sea. The entrance passage is 9 feet 8 inches long, and leads into a circular chamber 10 feet 6 inches in diameter. The lintel remains on the entrance at a height of only 2 feet 7 inches, and the passage slightly contracts towards the interior, being 3 feet wide at the outside and 2 feet 6 inches at the inner extremity. The little ancient dwelling (if dwelling it was) has been constructed at the very top of the steep bank, and must originally have stood out pro-

minently from it. But the roof, of whatever kind it was, has long since disappeared. Nothing remains but what the sketches exhibited show,—a few lower circles of stones, and the entrance which has been formed at a lower point of the slope, so as to lead upwards into the structure.

## XI.

NOTICE OF THE EXCAVATION OF THE BROCHS OF YARHOUSE, BROUNABEN, OLD STIRKOKKE, BOWERMADDEN, AND DUNBEATH, IN CAITHNESS; WITH REMARKS ON THE PERIOD OF THE BROCHS; AND AN APPENDIX, CONTAINING A LIST OF BROCHS IN SCOTLAND, AND EARLY NOTICES OF MANY OF THEM (WITH PLANS, &c.) BY JOSEPH ANDERSON, CORR. MEM. S.A. SCOT., AND NOW KEEPER OF THE MUSEUM.

(This Paper is reserved for the *Archæologica Scotica*, Vol. V., now in the Press.)

## XII.

NOTICE ON THE EXCAVATION OF "KENNY'S CAIRN," ON THE HILL OF BRUAN; CARN RIGH, NEAR YARHOUSE; THE WARTH HILL CAIRN, DUNCANSBAY; AND SEVERAL SMALLER SEPULCHRAL CAIRNS IN CAITHNESS. BY JOSEPH ANDERSON, KEEPER OF THE MUSEUM.

*Kenny's Cairn*.—This cairn stands on the shoulder of the hill of Bruan, and is about a quarter of a mile distant from the Horned Cairn of Get, described in vol. vii. p. 490. Externally, it measured about 40 yards in circumference at the base, and about 15 feet high in the centre, its form being nearly round, and flattened somewhat on the top where the roof had fallen in. When excavated, it showed the usual divided central chamber, differing in its form, however, from any of those previously described.<sup>1</sup> Instead of being tripartite, the chamber in this case was only bipartite in the usual form, but had a small *loculus* off the main chamber, on the south side. The passage leading into the chamber from the out-

<sup>1</sup> See Notice of the Chambered Cairns of Caithness, in "*Proceedings*," vol. vi. p. 442.



side, which was lintelled throughout with large and heavy stones, was 10 feet long, entering with an external aperture, 3 feet high, and 2 feet 9 inches wide, and gradually enlarging till its aperture on entering the chamber was 4 feet high, and  $4\frac{1}{2}$  feet wide. This was narrowed to 3 feet, however, by a pair of projecting jambs.

The first compartment of the chamber measured 8 feet on the floor from side wall to side wall, and 4 feet from front to back, or from the jamb-like stones at the aperture of the passage to the two divisional slabs set up across the floor, and inserted in the side walls. The aperture between their edges, by which access was gained from the first to the second or main compartment, was  $3\frac{1}{2}$  feet. The dividing slabs did not rise to the roof, which formed one dome over the two compartments. About 4 feet in height of the overlapping part of the roof remained entire; and as the walls of the chamber slanted outwards from the base to nearly the middle of the height, the form resembled that of a huge kettle.

As usual, a great slab was set in the back wall facing the entrance; and there were other two great slabs on either side, where the second pair of dividing stones ought to have been, but instead of projecting across the floor, they were set flat in the side walls, and the building carried over the top of them. The extreme height of the wall remaining in the main compartment of the chamber was 9 feet. The recess on the south side measured, on the floor, 4 feet by 3; one of its end walls, however, being  $3\frac{1}{2}$  feet, and the other only  $2\frac{1}{2}$  feet. The back was a single stone; and the doorway was formed by a slab 20 inches wide, set up at one end to narrow the aperture of the front. The roof is formed of a single flag, and the floor of another, the height inside being  $3\frac{1}{2}$  feet. On raising the flag which formed the floor, another was found beneath it, and underneath them 4 inches of clay, plentifully intermixed with charcoal, ashes, and burnt bones; and beneath that again a third large flag, which lay on the undisturbed subsoil of the hill.

The whole floor of the main chamber and of the passage, more than halfway outwards, consisted of an accumulation of ashes and broken and burnt bones, about a foot in depth, impacted so closely that it rose to the pick in cakes, and was with difficulty reduced to a sufficiently friable condition to be examined for the included remains. These consisted of human and animal bones. The animals, as indicated by their teeth,

appeared to be the same as those of the other cairns, viz., the horse, the ox, the red-deer, the swine, sheep or goat, and the dog or fox. Flint chips occurred in less abundance than in the neighbouring cairns; but the quantity of broken pottery was extraordinarily large. Several hundreds of fragments of vessels, differing in size, ornamentation, and fineness, were turned up. The most common pattern was that formed by pressing the finger-nail and finger-tip obliquely into the soft clay. The twisted string pattern, and one made by the scoring of a pointed stick, also occurred pretty frequently. In the passage were found an oblong stone, about  $4\frac{1}{2}$  inches long by  $1\frac{1}{2}$  inch in thickness, having its sides smoothed and its ends rubbed flat, and a flat piece of bone, 3 inches long, with a smoothed, chisel-like edge—probably tools employed in the manufacture of the pottery.

*Corn Righl.*—A cairn which bore this name, and had all the appearance of a twin barrow, on an eminence overlooking the Loch of Yarhouse, had long excited our hopes, from its bearing the appellation of “The King’s Cairn,” but when we got into it we found that it had been previously opened, and completely destroyed long ago. It had been a chambered sepulchral cairn of the round type, or possibly a twin cairn, but half the chamber was obliterated; and on the floor we found a rusty “phleam” for bleeding cattle, that had been dropped by the previous explorers. The excavation of this cairn, however, showed the circular wall, which defined the round cairn externally, still standing to a height of 3 to 4 feet, about 6 feet within the verge of the loose mass of the cairn.

*Warth Hill Cairn.*—On the Warth Hill of Duncansbay, there is a cairn which has been called a beacon-site. From its position, overlooking the Pentland Firth, and occupying the highest ground in the northern horizon, it may very well have been so. Indeed, the quantity of ashes filling all the crevices of the cairn may be taken as proof that it was used as a beacon-stance; but its construction shows as clearly that it was originally a sepulchre. Many years ago, a well-made cist of flagstones, containing a skeleton, was exposed in one side of it; but, as I was convinced that this was not the original interment, we opened the cairn in the centre, and found a cist lying east and west,  $3\frac{1}{2}$  feet long, 2 feet 4 inches wide, and 21 inches deep. It was covered by a very large irregularly-shaped slab. The bottom of the cist and the two end stones had been

roughly dressed to fit, by blows applied along the edges of the slabs on opposite sides. On the middle of the covering slab we found an oblong water-rolled stone, naturally shaped, but which bears marks on both its ends of having been used as a hammer, and which seemed to be the hammer with which the coffin was made. Traces of the skeleton, unburnt, appeared in the cist, but neither pottery nor implements. We took up the bottom slab, and dug down to the undisturbed soil without finding anything. The other cist, previously opened, was 3 feet distant from the south-west corner of the central one. It was  $4\frac{1}{2}$  feet long, 2 feet 3 inches wide, and 20 inches deep, of unsquared slabs. Six feet from the east end of the central cist was a well-like hole, nearly square, with dry-built sides, and about 20 inches wide. It went down to the soil, and contained only black ashes. The cairn was nearly 40 feet in diameter, more oval than round, and seemed to have been surrounded at the outside by a double row of large blocks, the rows being about 4 feet apart, and the stones in each row about the same distance from each other.

*Small Burial Cairns.*—In a small cairn near the cairn of Get, about 20 feet in diameter, and not more than  $3\frac{1}{2}$  feet high in the centre, the whole cairn being covered with a growth of fully a foot of peat, we found in a cavity near the centre, lying on a flat stone, a skull, and the long bones and portions of the vertebræ and ribs of a human skeleton. The long bones lay all in front of the ribs, as if they had been tied in a bundle. We opened six or seven similar small cairns; but though we always found a cavity in which there might have been a deposit, we found no traces of the deposit itself except in the one instance.

*Small Cairns of Broken and Burnt Stones.*—In Caithness there are many examples of a most curious class of small cairns, usually 20 to 30 feet diameter, and 2 to 4 feet high in the centre. They are composed almost entirely of broken stones, a little larger than road metal, say 2 to 3 inches across. These stones are thoroughly burned, and the interstices between them filled with a black unctuous mould, so extremely fine as to be almost impalpable. I am aware that, in the case of some similar cairns described in Shetland, it has been denied that the stones were burnt; but I have satisfied myself, that in every Caithness example that I have seen they are actually burnt; and I produce the best evidence of that in this vitrified specimen with the mark of the wood charcoal

impressed in the vitrified stone. Charcoal is abundant in the mould which fills the interstices of them all. We opened two in this neighbourhood at this time; one near Yarhouse Broch, and one near Brounaben Broch, but failed to find any clue to their purpose. Towards the bottom there were layers of flat stones, pretty evenly laid above each other; and in the centre of the Brounaben one was what might have been a short cist, with the sides driven in, but, with the exception of charcoal, cinders, vitrified stones, and a few bits of bones, some of which were burned and some unburnt, we found nothing. Similar cairns, described as "ancient heaps of burnt stones, usually consisting of small stones broken to the size of road metal," and known in the county of Cork as 'Folach Fia,' in Tipperary as 'Deer Roasts,' and in Ulster as 'Giants' cinders,' are common in Ireland.<sup>1</sup> In several instances a wooden trough, hollowed out of a large tree, has been found in a depressed crater-like hollow in the centre of the heap. These troughs are described as 6 feet long, 2 feet broad, and 21 inches deep on the average. One was made of boards and trenails; and two of these troughs are mentioned as having been made of marl, hardened till it was like stone. A culinary purpose has been suggested for these troughs, but in their dimensions they are more like coffins than cooking-pots; and burial in such hollowed tree-trunks is a well-known sepulchral usage of less ancient date than the commoner stone-cist.

Whether these curious heaps are of sepulchral or culinary origin, it is strange that the peculiarities of the stones broken like road metal, the complete burning they have undergone, and the prevalence of wood-charcoal filling the interstices, should be common to the Caithness and to the Irish examples. Similar small circular mounds of broken and burned stones are described as occurring in Shetland,<sup>2</sup> in Orkney,<sup>3</sup> at Caldale, near Kirkwall, and in Morayshire.<sup>4</sup> It may be some incentive to future explorers to mention, that a hoard of gold ornaments, estimated at £6000,<sup>5</sup> was found in one of these heaps at Newmarket-on-Fergus, in Ireland.

<sup>1</sup> See Kilkenny Journal, iii. pp. 59, 84-6, 182-7, 384, and Archaeological Journal, ii. p. 384.

<sup>2</sup> See Dr Mitchell's paper in "Proceedings," vol. vii. p. 127.

<sup>3</sup> Catalogue of Coins of Canute, &c. By Richard Gough, p. 8. Lond. 177.

<sup>4</sup> Paper by Rev. Mr Morrison, on "Remains of Early Antiquities in Urquhart," in the Proceedings, vol. ix. p. 250.

<sup>5</sup> Collectanea Antiqua, iii. p. 231.



## XIII.

NOTICE OF THE DISCOVERY OF REMAINS OF THE ELK, (*CERVUS ALCES*, LINN., *ALCES MALCHIS*, GRAY.) IN BERWICKSHIRE; WITH NOTES OF ITS OCCURRENCE IN THE BRITISH ISLANDS, MORE PARTICULARLY IN SCOTLAND, &c. BY JOHN ALEXANDER SMITH, M.D., V. P. S. A. SCOT., F.R.S.E.

BERWICKSHIRE:—*Mertoun, Whitrig Bog*.—In the beginning of last July, I spent a week or two in Roxburghshire to recruit my health after a long and severe illness. Dr Dewar, Melrose, learning of my arrival, kindly called for me and informed me of the recent discovery of a deer's skull in Whitrig Bog, which he knew would interest me. It was not apparently that of a round antlered red deer, but had somewhat palmated horns, and might therefore be found to be that of an elk.

The next day, the 7th of July, my friend whom I was visiting kindly drove me over to Whitrig Bog, and I was fortunate enough to meet Mr Hogarth, who had discovered the deer's skull, and resided in a neighbouring cottage, where he still had the skull itself in his possession.

On seeing the skull, its large size, deeply depressed forehead, high occipital crest, and distinctly palmated horns, left little doubt of the species to which it belonged—the true elk, *Cervus alces*, Linn. Mr Hogarth took us to the place where it was found, and gave us the details of its discovery. I was glad to be able to get the skull with me for examination, and only regret that various circumstances have prevented me from exhibiting it to the Society at an earlier part of the session.

Before proceeding to describe the skull, I may give a sketch of the locality where it was found. Whitrig Bog is situated in that part of Berwickshire, which, almost like a peninsula, partially bounded by the river Tweed, runs into the north-eastern part of the county of Roxburgh, opposite to old Melrose. This district includes, on the high ground, Whitrig Bog; at some distance, on the river side, the picturesque ruins of Dryburgh Abbey; and still farther down the river, Mertoun House, the beautiful seat of the Right Hon. the Lord Polwarth, on whose property the bog is situated. The bog has been an old lake of considerable size, and is bounded on the south by rising ground

crowned by a series of rocky eminences designated the Sandyknowe Craigs ; on the higher and eastern extremity of these crags stands the well-known Sandyknowe or Smailholm Tower, and in the adjoining farm-house of Sandyknowe Mains, the great novelist, Sir Walter Scott, as is well known, spent some of his early days with his paternal grandfather, Mr Robert Scott. To the north of the bog rises up Brotherston Hill, so designated, it is popularly said, from the presence of two old standing stones, the "Brother's Stones," which stand a little apart from each other on the northern shoulder of the hill. The locality has been made classic by the genius of Sir Walter Scott, and he refers to it in his poem of "The Eve of St John." In the first stanza he says:—

"The Baron of Smaylh'ome rose with day,  
He spurr'd his courser on,  
Without stop or stay, down the rocky way,  
That leads to Brotherstone."

Whitrig Bog has been extensively cut into from its western extremity, and a large brick and tile work has been in operation there for many years, making use of the brick clay which lies below the shell marl of the peat bog. On the north edge of the bog, there is a partial bed of sand about three feet in greatest depth ; beyond this, is found the great bed of peat, averaging about ten feet in thickness, and containing portions of trees ; one, which I examined, was of birch. Below the peat there is an extensive bed of shell marl ; for three feet in thickness you have pure marl, then over a part at least of the bog there is a bed of blue clay about three feet in thickness, and below this again, there are other three feet of marl. Under the marl is a bed of brick clay, averaging six feet in thickness, and underneath this clay you come at last to the hard till, or boulder clay.

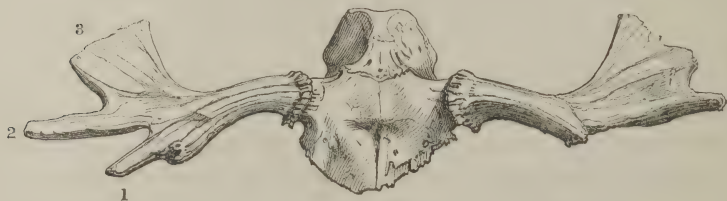
Mr Hogarth told me the elk's head was found about two months before my visit, at about 150 or 200 yards, from the northern margin of the bog. They were cutting peat at the time, and there was a great abundance of water in the peat ; the wall of peat, I may mention, is not cut down to its very bottom, to avoid the marl, and Mr Hogarth cut a drain through the bottom or remaining peat and part of the marl, towards the open side of the bog, to let the water escape. It was while cutting this drain in the peat, and before he reached the marl, that the skull was discovered.

The skull was lying with the under side upwards; he did not notice any lower jaw, but striking his spade downwards, he cut obliquely through the front of the head (from behind forwards, through the nasal fosse to the upper part of the nasal bones); the double row of molar teeth, which were turned upwards, however, attracted his attention, and he preserved the pieces of bone that contained them. He then dug out the rest of the skull, which was soft, part of its earthy constituents having been removed by its long submersion in the peat; and in doing so, unfortunately also broke off the points or extremities of the antlers. He dug no deeper and made no farther search for any of the other bones of the animal. The skull he saw was of an unusual character, he therefore took home the portions of it for preservation. Mr Hogarth had lived for many years at the bog, but never saw any horns of a similar kind dug up; he had, however, occasionally seen skulls with rounded horns resembling those of the red deer; remains of the large ox, the Urus, *Bos primigenius*, have also been found in the same bog.

At Lord Polwarth's seat of Mertoun House, I afterwards had an opportunity of examining a skull of a fine red deer, *Cervus elaphus*, with large and well-developed horns, displaying some fifteen or sixteen points, which was found with the entire skeleton of the animal in Whitrig Bog. I also saw various articles of furniture made of black oak from the same bog. To the Rev. M. H. Graham, of Maxton, I am indebted for sending me portions of the antlers of a large round antlered deer, *Cervus elaphus*, which were discovered in the neighbouring parish of Maxton, Roxburghshire, at a depth of three feet or so from the surface, when the ground was being tilled or stripped from the rock at the red sandstone quarry by the schoolhouse, in 1848. This gives us another instance of the occurrence of the remains of the red deer in a district from which they have long since disappeared.

*Description of Skull*—This skull of the elk is that of a large adult animal, as shown by the well ground state of the molar teeth. The horns, however, are not nearly so well developed as in some elks, the animal not having reached the mature age necessary for the full development of the large expanded horns. It consists now of only the upper part of the cranium, extending from the upper part of the nose and orbits to the complete back part of the skull. The superior maxillaries and

palate bones were cut through and broken by the spade, but contain, as already mentioned, the series of molar teeth. Its most striking feature is the broad expanded forehead, from each side of which spring the large horns, this part forms a rounded ridge, and is the highest part of the skull. This ridge consists principally of the frontal bones, its back part being formed by the two parietal bones, and it is crossed in the middle by the sagittal suture, which forms a slightly projecting ridge, and is the most prominent part of the projection in the mesial line. In front of this frontal ridge there is a deep abrupt frontal depression in the middle of the forehead, which becomes shallower forwards, and rises to the surface of the face in the line of the supra-orbital foramina; through this deep hollow the sagittal suture rises up as a rather prominent ridge.



Skull of the Elk, *Cervus alces*, found in Whitrig Bog, Berwickshire.

The back part of this frontal ridge or eminence is formed by the junction with the parietal bones in the coronal suture, and at the union of the two bones rises up into a prominent rounded knob, projecting backwards, on the middle of each side; these knobs are about four inches apart from one another, and from these knobs there is a projecting ridge on the parietal bones which runs backwards and inwards on each side towards the occipital protuberance, but terminates in a transverse ridge, crossing the middle line of the occiput, about half an inch in front of its suture, and about two inches in front of the occipital notch; the lateral lines of this projecting ridge run backwards and outwards, and form the occipital notch and ridge of the occipital bone. The back part of the skull, behind the elevated central ridge, is formed by the parietal



bones in the middle, with their curved lateral sutures separating them at the sides from the expanded temporal bones; their much curved posterior sutures separating them behind from the occipital bone and its projecting terminal ridge. This ridge projects also much backwards and outwards, having on its posterior surface a strongly marked oval-shaped and rugged projecting surface, about  $1\frac{1}{2}$  inch in depth, crossed by a vertical ridge, for the insertion of the strong *ligamentum nuchæ*; the occipital bone then slopes slightly outwards until it reaches the condyles at the foramen magnum. (See preceding figure.)

*Horns of Elk.*—The horns each show three well-marked divisions or snags—first, the rugged burr springs from each extremity of the frontal eminence, and the cylindrically shaped beam runs outwards, bending slightly downwards for about  $6\frac{1}{2}$  inches, and then becoming a little palmated. The right horn gives off a broad flattened branch or snag towards the front of the horn, which measures about  $3\frac{1}{2}$  inches across, it runs forwards and outwards for about 6 inches, and divides in front into two or more projecting snags or terminal branches (No. 1 of woodcut). The flattened and more palmated beam then proceeds outwards, rising upwards in the middle, again becoming depressed, and again rising upwards and forwards, and terminates in a rounded cylindrical snag  $1\frac{1}{2}$  inch across at its base, forming apparently the second branch (No. 2 of woodcut), and the true terminal extremity of the horn. It measures from the burr in the line of this snag,  $17\frac{1}{2}$  inches in total length, or nearly 20 inches in a straight line from the sagittal suture to the distal extremity of this rounded second snag. Rising from the back part of this second branch or beam, there is the third branch, the large palmated portion which runs backwards, and forms the terminal posterior portion of the horn (No. 3 of woodcut); it measures about 4 inches across its base, expands backwards and outwards to 5 inches in breadth, and terminates in a number of projecting snags or branches which spring from its external margin, but, like the others, are unfortunately all broken off. The horn of the left side is very similar in character, only its first branch to the front is not quite so broad and is imperfect, the horn having been broken across; it has next the second or rounded snag, which runs outwards and forwards, and forms, as I believe, the true terminal part of the horn; and beyond and behind it, the third portion expands back-

wards and outwards to a breadth of  $6\frac{3}{4}$  inches. The terminal snags which spring from its outer border being all also unfortunately broken off.

Mr Lloyd, in his "FIELD SPORTS OF THE NORTH OF EUROPE," vol. ii. p. 329, states that "The elk is a long-lived animal; he does not attain his full growth until after his fourteenth year. At least so it is to be presumed, as up to that period his horns, which are of a flat form, are annually provided with an additional branch. He sheds his horns about the month of February in each year. The female elk, unlike the reindeer of that sex, has no horns."

"The horns of the young male elk are perceptible nine months after its birth; for the first year, they are cylindrical, and short; the second year they are about a foot in length, but not branched; the third year, two points are discernible; the fourth year, three; the fifth, they are full grown in length. From that time forward, they yearly increase in breadth, and in the number of branches, until there are as many as fourteen on each horn." "The male is very much larger than the female." "The elk is easily domesticated."

In the NATURAL HISTORY OF NEW YORK, ZOOLOGY, by James E. De Kay, 1842, the horns of the American elk, *Cervus alces*, are described as follows:—"Horns in the male only. In the first year it exists in the shape of a short knob, not more than an inch high; in the following year it is a round spike slightly directed outwards, and about a foot long; in the third year they begin to branch forward, and to become palmated above. In full grown adult males, the palmated portions end in from five to eight short tips; and the brow antlers, if present, are round and pointed, directed forwards, and occasionally bifid or even trifid."

The growth and general plan of the development of the horns of the elk, it seems to me, may be explained as follows:—

First there appears an unbranched, short, and cylindrical horn; it then becomes longer and broader, but is still unbranched at the second year; at the third, two points are developed; and at the fourth year, three points, one being directed to the front, another in the middle, the line of the beam, and the third towards the back; in the fifth year the horn attains its greatest length, running outwards in the line of the rounded beam, the middle or longest snag (often more cylindrical in form, and generally single), being its termination. The snag which

springs from the front of this middle one then developes in breadth, spreading out upwards and forwards, and gives off two or more terminal snags; and the third or posterior snag becomes still more largely developed in breadth, running backwards, and rather inwards, and giving off numerous terminal snags along its external border as it increases in age.

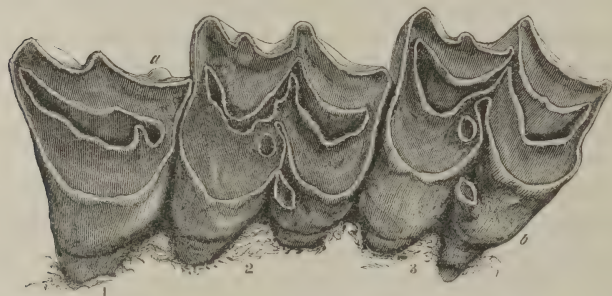
The first branch or antler of the horns generally springs at some six inches or so from the burr, much farther up the rounded beam than in the Irish elk or red deer; it cannot, therefore, be very correctly described as a brow antler. The beam of the horn runs outwards, and at some six inches distance or so from the burr expands into a palmated form, it then becomes divided into three portions, one running forwards and upwards the first snag or antler, the second running transversely outwards, and the third and last running backwards and rather inwards, thus completing the form of the horn, and by the development of these anterior and posterior snags the great breadth of the horn is apparently produced.

The large palmated portions appear to rise up in opposite planes from the line of this central snag as from a base, the one in front, and the other behind, as the horn increases in size with age. The original middle snag, corresponding to the beam of the horn, is sometimes lost in the greater development of the third or posterior snag, thus appearing to fall back on the original plan of the two snags, or first developed points of the horn of the young elk.

This progress of development is well seen in this skull found in Berwickshire, the three great divisions of the horn being very distinct. The animal was therefore probably upwards of five years of age.

*Dentition of the Elk.*—The series of teeth are of much interest from their well ground and strongly marked characters; and it is curious to notice, that those wanting on one side, fortunately remain on the other, and in this way a perfect series of the superior maxillary molar teeth can be described. There are on each side of the upper jaw six teeth, three premolars and three molars, and each tooth is inserted a little obliquely in the jaw, so that the posterior and outer angle of the crown of one tooth rests within about a third of the breadth of the next tooth behind it, and in this way the projecting saw-like character of the combined cusps of the teeth is much increased.

The *premolars* consist each of a single column, convex next the interior of the mouth, and, on its outer side, of a somewhat straight surface. There is on the outer surface of each tooth, however, a fold or depression approximating it so far to the double columnar character of the true molars, and the third or last of the premolars shows a slight indication of an additional point or cusp on the posterior part of its external surface, next the first true molar (see No. 1, *a* of woodcut). In these premolars, the surface is worn down, showing the outer coat of enamel surrounding the bone or dentine of each tooth, and a crescent-shaped island of enamel in the middle of each, the rounded part of this crescent being next the inner side of the tooth; this rounded inner surface of enamel is



(1.) Last Premolar, and (2 and 3) First and Second, Maxillary Molar Teeth of the Elk, *Cervus alces*, found in Whitrig Bog, Berwickshire—(natural size).

also slightly folded on itself towards its posterior part, approximating it to the outer part of the crescent, and making thus somewhat of a loop of enamel on each tooth; this is most distinct in the first and third of the premolars. The premolars each measure, on the upper surface, about 1 inch in length, and about  $\frac{3}{4}$ ths of an inch in greatest breadth.

The true *molars* may be described as each formed of two columns, somewhat like two of the premolars joined together, only a little more compressed



in character ; their two convex surfaces being next the inside of the mouth, and their outer or more concave surfaces, set like the premolars rather obliquely, towards the outside of the mouth. Their upper surfaces are well ground down, and show their structure very distinctly ; like the premolars, the dentine has been stained of a dark or black colour by the peat, while the enamel retains its original whiteness.

In the first of the true molars, we have the inner or central crescent-like portions of enamel (of the premolars) continuous, thus forming a double crescent-shaped portion with the dentine surrounding it ; outside, we have the outer coating of enamel of the tooth, double convex next the mouth, and the two oblique or concave portions, next the outside of the tooth. The first portion or crescent of the inner enamel, that next the premolars, displays like them, a fold of enamel on its posterior surface. Behind this first crescent-shaped portion of enamel of the middle of the tooth (next the premolars), and towards its inner extremity, there is in the dentine a small isolated circle or ring of enamel ; and on the outer side of the convex inner column of the tooth (next the mouth), there is a small but distinct denticle or accessory column, the enamel of which is worn off, and shows, enclosed by it, a somewhat triangular patch of dentine (see No. 2 of woodcut).

In the second molar the general character of the tooth is the same, only the double crescentic-shaped portions of enamel in the middle of the tooth communicate at their junction with the external surface or outer enamel, coating the tooth ; and in one tooth the little distinct ring of enamel in the dentine, behind the first inner or crescent-shaped portion of enamel, is seen to be formed of a loop of the enamel coating the external surface of the first column or half of the molar, next the middle of the tooth on its inner side ; the other corresponding second molar tooth, however, shows it still isolated. The accessory denticle is also present towards the base of the second column of the tooth, on its inner surface, the enamel being also worn off its top, and the dentine displayed (see No. 3, *b* of woodcut).

In the third or last molar, the character of the tooth is, of course, much the same, only here the two inner crescents of the enamel of the tooth communicate in the mesial line with the enamel of both the external and internal surfaces of the tooth, and the distinct ring of enamel of the other teeth is seen here to be simply an open fold of the enamel of the internal

surface of the first column of the tooth, where it passes to the middle of the tooth to join the extremity of the first crescentic fold of enamel of the interior of the tooth. The accessory denticle at the base of the inner surface of the tooth is distinct and pointed, the tip merely being ground down and exposing a small spot of dentine.

In the Irish elk, *Megaceros Hibernicus*, this small accessory column or denticle is also present, but lies apparently more directly between the two lobes or columns of the tooth, and perhaps also a little lower down on its base, so that it does not apparently become ground down on the top, as in the elk. The small loop, or ring of enamel, already described as existing at the inner and back part of the first column (or middle of the tooth), of each of the molar teeth of the elk, does not appear to exist in the *Megaceros Hibernicus*.

The true molars measure from 1 inch to  $1\frac{1}{4}$  in greatest length, and from  $\frac{3}{4}$  of an inch to an inch in greatest breadth, the length of the whole series being  $6\frac{1}{4}$  inches. The distinctly marked character of the teeth has tempted me to be thus minute in their description; it may perhaps be useful for comparison, and assist in discovering other instances of the existence of the elk.

*Measurements of Elk's Skull.*—The cranium measures in length from the middle of the occipital notch to the transverse nasal suture, in the mesial line,  $9\frac{3}{4}$  inches. The length from the occipital notch to the coronal suture, between the parietal and frontal bones, is  $4\frac{1}{4}$  inches in the mesial line; and from the same occipital notch, to the supra-orbital foramina,  $8\frac{1}{4}$  inches. From the occipital notch to the basal side of the foramen magnum the skull measures 6 inches in depth.

The breadth of the skull across the frontal bone (between the orbits, and the base of the frontal processes from which spring the burrs of the horns), is 8 inches. Between the burrs of the horns themselves, the frontal bones measure  $7\frac{1}{2}$  inches. The frontal processes, which give rise to the horns, each measures  $7\frac{3}{4}$  inches in circumference below the burr, and are considerably flattened on their under side.

The rounded beam measures  $6\frac{1}{2}$  inches in circumference beyond the burr.

The horns in their present imperfect state measure 3 feet 4 inches across, from the point of the second or rounded snag of one horn, to the

extremity of the corresponding snag of the other horn. The greatest breadth of the right or largest horn is 1 foot, measuring from the broken points of the first palmated and projecting snag to the back part of the third portion, which projects outwards and backwards.

I may state that I extracted from the brain cavity of the skull, through the foramen magnum of the occipital bone, a mass of hardened peat, which had filled the entire cavity. I am thus enabled to corroborate the statement of Mr Hogarth, that the skull was found in the peat, and not in the shell marl of the bog.

Some time ago I met Dr David Page, our well-known geologist, and told him of the elk's head I had got at Whitrig Bog. He mentioned that he had a letter from Mr Charles Lapworth of Galashiels, informing him of the discovery of a large deer's skull in Whitrig Bog, and asking for information as to the species. He had little doubt it was the same skull I had got. Mr Lapworth afterwards wrote to me that, along with his friend Mr Wilson of the "Border Advertiser," he learned of the deer's head being found, had gone to see it, and examined the place where it was discovered. Mr Wilson thought of drawing up a note of its discovery for his newspaper, but this intention was never carried into effect. They were geologists rather than zoologists, and were engaged at the time in working at the geology of their district, following it out very successfully across a great part of the south of Scotland.

*The Elk (Cervus alces), of America.*—The elk of the old world, and the elk<sup>1</sup> or moose-deer, the *Mūsŭ* of the Cree Indians of the new world, are believed by naturalists to be the same species of animal. Sir John Richardson, in his "Zoology of H. M. S. Herald, 4to, London, 1854," gives details of the skeleton of a recent moose-deer, in illustration of the fossil remains of the elk found along with the bones of the *Elephas primigenius*, *Cervus tarandus*, &c., in the bone deposit in the frozen cliffs of Eschscholtz Bay, near Behring's Strait, in Arctic North America. The skull closely corresponds with the one I have described; some dimensions of my specimen, however, seem rather larger than that described by Sir John. His descriptions give the distinctive characters between the elk

<sup>1</sup> Unfortunately in America the name elk is given also to the *Cervus canadensis*, so that there, the moose deer, is the necessary and distinctive appellation.

and other species of deer, I shall, therefore, quote some of his details of the osteology of the skull, which will help to show the almost exact correspondence of his American specimen with this elk from Berwickshire; they may also be useful to those who have portions of the skulls of deer of doubtful species, but have no access to any work detailing the osteology of the elk:—

*American Elk, C. alces, Linn.*

“In the abbreviation of the nasals, the prolongation of the maxillaries and premaxillaries, and in the elongated parietals extended in the same plane with the face, the *muswa* or moose-deer differs from the other *Cervidæ*, *Bovidæ*, or *Capridæ*. The summit of the skull on its coronal aspect is formed by the median elevation of a rounded ridge which crosses from the basis of one antler to that of the other, and is cut at right angles by the sagittal suture, whose raised edges constitute the summit in question. Into the composition of the transverse ridge the parietals enter, but it is constructed chiefly by the frontal; and, at its lateral termination each way, and on its inial aspect there is a short conical protuberance belonging to both bones. The distance from the apex of one of these protuberances to that of the other is 4 inches, and the spaces between them and the orbital plates of their respective sides are occupied by the swelling bases of those processes, which, having a lateral direction, with a slight inclination coronad, give origin and support to the antlers. Close to the prominent basal ring of the antler, the process has a circumference of  $6\frac{1}{2}$  inches. In the middle of its length the *frontal* is bent inwards towards the encephalon, as if it had received a violent blow when in a plastic state, and the hollow is divided longitudinally by the raised edges of the sagittal suture. A similar incurvature, but not to the same extent, exists in the frontal of the reindeer. Opposite to the antinial border of the depression in the *muswa*, the supra-orbital foramina perforate the orbital plates, which are thinner and less prominent than those of the musk ox. As it is in the development of the *parietals* that the peculiarly elongated form of the posterior calvarium depends, so we find that these bones differ in form from their homologues in other ruminants. Conjointly they are bounded next the frontals by a straight transverse edge, having a very concave occipital one opposite to it, and laterally on each side by less concave edges, which the squamosals overlap. In forming the posterior transverse boundary of the frontal, the coronal suture does not bend antinial in its median portion, as it does in the reindeer cranium. . . . Except in the camel, none of the genera allied to *Cervidæ* and *Bovidæ* present an example of so prominent an occipital crest as this deer. Rounded in outline laterally, the crest is notched mesially in the usual site of the occipital spine; and beneath its margin, the super-occipital plate is concave and rough



for the attachment of muscles, but the ex-occipitals have an inial slope as they approach the *foramen magnum*, whose nearest border still falls an inch antinial<sup>1</sup> of the overhanging margin of the crest. . . . The lateral edges of the condyles are acute and free, without the slightest tendency to form an accessory trochlea as in the musk ox; and a defined transverse line on each condyle indicates the meeting of its two articular surfaces. . . . About one-third of the distance between the frontals and the extreme tip of the premaxillaries is occupied by the nasals. These bones representing the neural spine of the rhinencephalic vertebra, are subject to greater variety than the centrum, and judging from the discrepancies that occur in the few crania of the elk I have had an opportunity of examining, the variations in that species are more frequent than in other deer. In our specimen the right nasal is shorter than the left one, the transverse facial suture being rendered irregular by the antinial projection of a short angular process of the frontal on that side. The cranium of one American elk in the museum of the College of Surgeons in London agrees with ours in this respect, while in another in the same collection there is a triangular mesial bone interposed between the nasals for nearly their whole length, this skull having, in fact, three nasals. In the skull of a European elk, also in that collection, this intercalated bone is smaller and more irregular in shape, and looks like a large sesamoid bone. The nasals of our specimen differ from all the three just mentioned in having a suborbicular bone, half an inch in diameter, united to the antinial extremity of each of them by suture. With respect to the general form of the nasals of the muswa, they are rather broad in a lateral direction, and much arched, not regularly, but abruptly bent, so that each bone has a defined lateral as well as a coronal surface. By the abbreviation of the nasals, much of the interior structure of the nostrils is exposed in the skeleton. . . . The breadth of the face at the most protuberant parts of the maxillaries is less in the muswa than in the European elk, as I ascertained by comparing the crania in the College of Surgeons, and as Mr Queckett had previously observed. . . . Between the rows of the molars the palate is moderately concave transversely, and slightly convex longitudinally. It measures  $2\frac{1}{2}$  inches across at the first premolars, and  $3\frac{1}{2}$  inches at the last molars. In length, the entire molar series is 6 inches, while the distance from the first premolar to the tip of the premaxillary is  $9\frac{1}{4}$  inches. Anterior to the premolars the palate is narrowed to an almost semicircular channel, bounded by thin ridges of the maxillary, but widens and flattens again where it is formed by the premaxillaries."

<sup>1</sup> *Aspects of the Head*.—An aspect towards the plane of the ridge of the occiput is *inial*; towards the plane of the corona, *coronal*; towards the base, *basilar*; or towards the side, opposite the inion or ridge of the occiput, *antinial*.—*Professor Barclay*.

Sir John Richardson states that the breadth of face, at the most prominent part of the maxillaries, is less in the *muswa* than in the European elk; he is, therefore, inclined to think the American elk distinct. I have already mentioned that naturalists now believe them to be the same species. Sir John thus describes—

*The Dentition of the Muswa.*—"Incisors  $\frac{3}{3}$ , Canines  $\frac{1}{1}$ , Premolars  $\frac{3}{3}$ , Molars  $\frac{3}{3}$ ; total  $\frac{10}{10}$ . A complete saw is formed by the very acute cusps of the molars. Each of the maxillary molars has a minute projection or denticle on the mesial aspect of the posterior lobe, and the lateral surfaces of both molars and premolars have a strong inclination mesiad. The inclination in the opposite direction of the mandibular molars is not so great, and it is only the first mandibular molar that has the accessory denticle, situated, of course, on its lateral aspect. No more effective instruments could be devised for cutting the flexible willow-twigs on which the animal browses than its molar series of teeth, and they retain all their sharpness in use. The incisors are also acute-edged, and differ little from one another in size, the unciform canine, however, and the tooth which adjoins it, being a little narrower than the middle pair. There are no vestiges of the upper canine which exists at the maxillary in both male and female reindeer.

"*Antlers of the Elk or Muswa.*—These extraordinary deciduous growths take their origin in the lateral processes of the frontal, which project about an inch and a half from the sides of the skull. A prominent ring, rough with blunt wart-like projections, marks the commencement of the antler, and is finally, by obliterating the nourishing arteries, the cause of its fall. Beyond the ring there is a stem, round at the beginning, but becoming speedily more and more compressed, until it expands into a large palmated plate, which is so curved that its inial and antinial halves make an angle with each other of 130 degrees, the curve being, however, gradual, rather than sharp, and having its apex situated about three inches inial of the axis of the stem, thus dividing the palm into two unequal planes. The antinial expansion rises coronad, with a slight inclination antinial, but not so much as to cause it to pass the line of the frontal borders of the orbits, while the direction of the inial and larger portion is, after the curvature becomes complete, nearly directly inial. The large palmated portion of the antler terminates in a number of short snags, with sinuses of various depths between them, varying in number according to the age of the animal."

In the specimen described by Sir John Richardson, there were eleven short snags on one horn, and fourteen on the other; the longest snags were the pair that stand nearly in the axis of the stems, and their tips were 22

inches from the sagittal suture, or 40 inches from each other. From the antinial snag to the last inial one, the distance was 27 inches in one antler, and nearly 2 inches less in the other. The front snags of the two antlers were  $10\frac{1}{2}$  inches apart, and the two most inial ones nearly 28 inches. The weight of the antlers with the skull and mandible was nearly 24 lbs. avoirdupois.

I add a few of the dimensions of the skull given by Sir John Richardson, which will show its close correspondence with my specimen :—

*Dimensions of the Skull of the Muswa (by callipers).*

	Inches.
Length of the skull from the antinial end of the premaxillary to the occipital ridge, . . . . .	21·7
Length from the same point to the transverse suture at the root of the nasals, . . . . .	13·7
Length from the transverse suture to the occipital ridge mesial line, . . . . .	9·7
Breadth at the orbits' inial edges, . . . . .	8·7
Breadth at the orbits' basal edges, . . . . .	8·5
Breadth at the orbits' antinial edges between the projecting corners of the lachrymals, . . . . .	7·2
Breadth of frontals between orbits and antlers, . . . . .	7·8
Breadth at the widest part of the squamosal adjoining the paroccipitals, . . . . .	6·5
Breadth between the outsides of the zygomatic arches, . . . . .	8·1
Distance between the lateral edge of one condyle to that of the other on the inial aspect, . . . . .	3·7
Distance between the occipital crest and the basilar edge of the foramen magnum on the mesial line, . . . . .	5·2
Distance between the basilar edge of the foramen magnum and the antinial end of the basi-sphenoid, . . . . .	3·8
Breadth of the shoulders of the basi-occipital, . . . . .	2·4
Distance between the points of the exoccipital spinous processes, . . . . .	3·7
Greatest width of the opening to the posterior nostrils, . . . . .	1·5
Width of the maxillæ at the fangs of the first and second true molars, . . . . .	6·0
Distance between the roots of the incisors and the posterior border of the mandibular condyle, . . . . .	19·2
Distance from the same point to the inial curve at the angle of the mandible, . . . . .	18·7
Rise of the coronoid process above the surface of the condyle, . . . . .	2·7
Chord of the premolar and molar series, . . . . .	6·4
Distance from the roots of the medial pair of incisors to the first premolar, . . . . .	8·0
Distance from the last molar to the inial curve of the jaw, . . . . .	4·4

NOTES OF THE OCCURRENCE OF THE ELK (*CERVUS ALCES*), IN  
THE BRITISH ISLANDS.

## I. SCOTLAND.

I shall now notice in detail various instances of the discovery of the true elk, *C. alces*, in the British Islands. It is only within a very few years that our naturalists have actually taken cognizance, or been satisfied of, the existence of the true elk in Britain; therefore, when one of our older naturalists, the distinguished Professor John Fleming, D.D., refers, in his "History of British Animals," Edinburgh, 1828, 8vo, to two of the earliest notices, which I shall describe, as being stated to be the discovery of the remains of the elk; he never seems even to consider the possibility of its being really the true elk, but states—"Whether these two examples from marl beds should be referred to the fallow deer or the Irish elk, may admit of some doubt, though it is probable that they belong to the former."—*British Animals*, p. 27.

The first four instances of the occurrence of the remains of a deer designated the elk which I shall notice, seem to have been overlooked by naturalists. From the general description of these specimens, I am rather inclined to attribute the most of them to the *Cervus alces*, especially as very few instances of the discovery of remains of the *Cervus megaceros*, the Irish elk, have been recorded in Scotland.

## MID-LOTHIAN.

*Duddingston Loch*.—In the "Account of the Institution and Progress of the Society of the Antiquaries of Scotland," by William Smellie, Edinburgh, 1782, 4to, we have a printed list of the first donations made to the Museum of the Society. The second donation in this published list, under the date Jan. 16, 1781, was a very remarkable one; it consisted of a great quantity of bronze weapons, and remains of man and animals which were discovered in a marl bed at the bottom of Duddingston Loch. Among these relics were horns of deer, some being at the time distinguished as of the elk, and therefore, undoubtedly, differing from the common red deer found along with them. Unfortunately, none of these horns have been preserved. They were probably broadly palmate horns, and might be correctly designated as belonging to the elk, as various good



naturalists were, at that time, members of the Society, and the remains of this animal have since been found in other marl beds in Scotland.

At the early date of this donation all bronze weapons were believed by antiquaries to be of Roman manufacture, and, accordingly, these are described as Roman; those in the Museum of the Society belong to the ordinary class of early bronze weapons, spear-heads, and leaf-shaped swords.

I annex a copy of the donation, which will show the extent of the discovery, and might well tempt modern antiquaries to make an additional search in a locality so close to our Scottish metropolis:—

“By Sir Alexander Dick of Prestonfield, Bart.

“No. 2. A quantity of Roman arms, consisting of twenty-three pieces of the heads of the hasta and jaculum; twenty pieces of the blades, and nine of the handles of the gladius and pugio; a ring, three inches in diameter, fastened to the end of a staple; and a mass of different pieces of these arms, run together by fire, all of brass; skulls and other human bones, together with the horns of animals of the deer and elk species, dragged out of the middle of a bed of shell marle at the bottom of his loch of Duddingston.”

“By the Secretary.

“No. 3. A drawing of such of the above arms as are entire.”—P. 39.

Here, then, we have remains probably of the elk apparently associated with the bones and weapons of man.

*Greyerhook*.—At p. 54 of the same work, we have the following donation recorded, under the date July 5, 1781:—

“By Mr James Muirhead,

“No. 63. A skeleton of a palmated head, with very large horns, projecting both before and behind, dug up lately on the farm of Greyerhook, near Cramond, occupied by Mr Henry Sawers, and found buried eight feet below the surface, covered with five feet of marle, above which was three feet of moss.”

Unfortunately, this skull is not now to be found in the collection; but, from the description so particularly detailed in the donation list, there can be little doubt it had been the skull either of the *Megaceros Hibernicus*, or probably the true elk, *C. alces*.

## FORFARSHIRE.

*Breckin—Trinity Muir.*—In the second part of Smellie's "Account of the Society of Antiquaries of Scotland," and in the list of donations to the Museum, under the date of July 1, 1783, we have recorded a donation :—

"By Mr George Aitkenhead,

"No. 521. The broad upper part of the horn of an elk, dug up *anno* 1779, seventy-six feet below the surface of the ground, in Trinity Muir, in the heart of a marle bed, which, besides being covered with several strata of earth, clay, and sand, each between six and eight feet in thickness, had over them all a covering of moss to the height of thirty feet."

## BERWICKSHIRE.

*Dunse.*—In the same second part of Smellie's "Account," in the list of donations to the Society of Antiquaries, we have a donation under the date Sept. 2, 1783 :—

"By Mr William Mabon, cutler in Dunse,

"No. 552. A large palmated horn, twenty-seven inches in length, and nine inches in breadth."

It is not stated where it was found, but it is not improbable that this horn was found in Berwickshire, the same county in which the skull of the elk described by me was discovered. It is very unlikely that the horn of a foreign elk would be presented to the Museum of Antiquities.

These instances are probably among the first that have been recorded of the elk as found in Scotland.

## FORFARSHIRE.

The next recorded example of the discovery of the elk which I have to describe is one of those so doubtfully referred to in the "British Animals." Some years ago, when looking over the first volume of the Transactions of the Royal Society of Edinburgh, I made, as I conceived, a discovery of some little importance. A detailed history of the Society is given in the Transactions; at p. 36, under the date of January 1785, it is stated that,—

"Dr Walker (at that time Professor of Natural History in the University) laid before the meeting a collection of specimens of Natural His-

tory, and other curiosities which had been presented to the Royal Society. These are enumerated in the list of donations at the end of Part I. of this volume." Turning to the end of the volume, at p. 77, we find an appendix, with the list of "Donations presented to the Royal Society of Edinburgh," and among these, under the date 1788, one: "By the Honourable Lord Dunsinnan. A painting in oil of the head and horns of an elk, found in a marl pit in Forfarshire, No. 44." The following note at the end of the donation list informs us of the meaning of this appended, No. 44. "*N.B.*—The numbers refer to the order in which the articles are deposited in the Museum of the University of Edinburgh."

When a medical student attending the Edinburgh University many years ago, being fond of the study of natural science, I attended several courses of lectures under Professor Jameson, then the Professor of Natural History: as one of his students, I had free access to the Natural History Museum of the University, and spent much time in examining the various interesting objects it contained. There was one section of the Museum which had an especial interest for me, an upper gallery set apart from the *mare magnum* of the general collection, and devoted to the illustration of our local zoology; this was "The British Gallery" of the collection; here, with Fleming's "British Animals" for my guide-book, I spent many days. Now, over the inside of one of the doors of this gallery there was hung a painting in oil of the skull and horns of an elk. I wondered how it happened to be there; it seemed to me that it was but a poor specimen of an elk, the horns being small and undeveloped, and therefore it could scarcely have been thought worth making a painting of at least as a characteristic specimen of the animal, unless, indeed, it had been found in some remarkable locality. I could, however, learn nothing as to its history, and was obliged to give up my inquiries for the time. By-and-bye, when I began to look a little into the account given in the Transactions of the Royal Society, and discovered that the oil painting of the elk formerly presented to the Society, of which I could learn nothing, had been actually presented to the Museum of the University. I had then no doubt that I had now discovered the cause of the painting of the elk's head being hung up in the British gallery of the Museum, and that this was actually the sketch in oil of the elk's head found in Forfarshire, and presented to the Royal Society by Lord Dunsinnan

in 1788. Some years ago, I asked Mr J. B. Davies of the Museum of Science and Art, to which the old Natural History Museum of the University had been transferred, what had become of this old painting of the elk's head, telling him my history of it; and was glad to find that, though not now exhibited, it was still to be got when wanted. Mr Davies informed me nothing was known or recorded of its history, and, at my request, he made a search into the earlier records of the Museum, but



Painting in oil of Elk's Skull (*Cervus alces*) found in Forfarshire.

could find no reference to it anywhere. The Director of the Museum, Mr Archer, has kindly allowed me to exhibit this clever painting of the skull to the Society (and I have given a copy of it in the accompanying woodcut). I have no doubt it is this early recorded example of the true elk or *C. alces*, and one of the first authentic instances discovered in Scotland, or indeed in Britain.

It is interesting also to find its occurrence in this county of Forfar, where one of the still earlier and perhaps more doubtful instances of its discovery has been already referred to.



## PERTHSHIRE.

*Kinloch, Marlee.*—The other instance of the supposed discovery of remains of the elk, alluded to by Professor Fleming, is published in the old "Statistical Account of Scotland," vol. xvii. p. 478, Edinburgh, 1796. In the account of the parish of Kinloch, Perthshire, by the Rev. John Brodie, it is stated that :—"A pair of very large deer's horns were found a few years ago, in a bed of marl, in Mr Farquharson's marl pit at Marlee. From their superior size and palmed form they appear to be the horns of the elk-deer, antiently the stately inhabitant of the Caledonian forests."

Professor Richard Owen, in his valuable and beautiful work, "A History of British Fossil Mammals and Birds," published in London in 1846, does not include the true elk, *C. alces*, among his list of British mammals, no authentic instance of its occurrence in Britain being at that time generally known to naturalists. Under his description of the Reindeer, however, he alludes to those two instances which I have just detailed, taking the reference from Fleming's "British Animals." Professor Owen refers also to notices, by Mr Patrick Neill, of the beaver, and deer's horns of large dimensions and branched, being got in the marl of this same loch of Marlee, along with very deeply grooved leg bones. From the latter discovery, he is inclined to suppose both it and the former examples may refer to horns of the reindeer, as he considers these leg bones probably do. "The reindeer is most remarkable," Professor Owen says, "for the depth of the grooves, especially the posterior one of the metatarsus. In the *Megaceros Hibernicus*, however, the median longitudinal groove is wider and shallower on both the fore and back part of the metacarpals and metatarsals than in any other species of deer." The metatarsal bones of the elk, I may remark, are also grooved, though not so deeply as in the reindeer.

Professor Owen says—"Dr Fleming ('British Animals') cites a pair of deer's horns found in a marl-pit at Marlee, which, from their superior size and palmed form, were supposed to be the horns of the elk-deer; he refers also to the donation to the Royal Society of Edinburgh 'by the Hon. Lord Dunsinnan, of a painting in oils of the head and horns of an elk found in a marl-pit, Forfarshire,'" and adds: "Whether these two examples from marl beds should be referred to the fallow-deer or the Irish elk, may admit of some doubt, though it is probable that they

belong to the former." Professor Owen remarks—"The superior size of the palmed antlers militates against their reference to the ordinary fallow-deer," as Professor Fleming had supposed probable; "and the observation of the deeply grooved metacarpal or metatarsal bones, from the same marl deposit, renders it desirable to compare the specimens, and the oil painting, with the large palmed varieties of the antlers of the rein-deer, figured by Cuvier in the fourth volume of the '*Ossements Fossiles*,' 4to, 1823, Plate iv. figs. 11, 18, and 16." The last number is apparently a misprint for 26.

In a paper of mine, being "Notices of the Remains of the Rein-deer found in Scotland," &c., published in the Proceedings of the Society, vol. viii. p. 186, 1869, I quoted some of these remarks of Professor Owen on the *deer's horns of large dimensions and branched*, found at Marlee, along with *very deeply grooved leg bones*, and described by Mr Patrick Neill in 1821, which Professor Owen included under his notice of the reindeer, in his "British Fossil Mammals." These remains, I considered, were, in all probability, those of a reindeer.

In the same paper, I also quoted from the "Old Statistical Account" this notice of the *very large palmed deer's horns*, found at a much earlier date, in the same locality, as probably having been also those of the reindeer. Now, however, from the various instances recorded of the true elk, as well as from the description of the bones themselves, I am inclined to consider these earlier remains really were, as indeed they were described at the time by the Rev. John Brodie, those of the elk-deer.

It is at least highly probable this might have been the skull of the true elk, *C. alces*. The great fossil *Megaceros hibernicus*, the Irish elk, with its large palmated horns, being, as I have already stated, more rare in Scotland than the true elk appears to have been, judging by the discovery of their fossil remains.

As suggested by Professor Owen, I have now been able to make the comparison with the oil painting, and, as I have already stated, it is undoubtedly a picture of the skull of the true elk, *Cervus alces*, the history of which I have already so fully detailed.

*Auchtergaven, Airleywight*.---Mr James Smith of Jordanhill, in his

"Researches in Newer Pliocene and Post-Tertiary Geology," Glasgow, 1862, in a paper on the "Phenomena of the Elevated Marine Beds of the Basin of the Clyde," p. 42, says, "In Scotland the remains of the elephant, the stag, and the fallow deer, all probably of extinct species, have been found in the diluvial drift or till; and in marl pits or marine beds, those of the rhinoceros, the Swedish elk (*Cervus alces*), and the Irish elk (*C. megaceros*). It may be questioned, however, whether either of the elk species belong to the tertiary epoch." I make this quotation simply on account of his reference to the *C. alces*, and therefore only refer to it. He

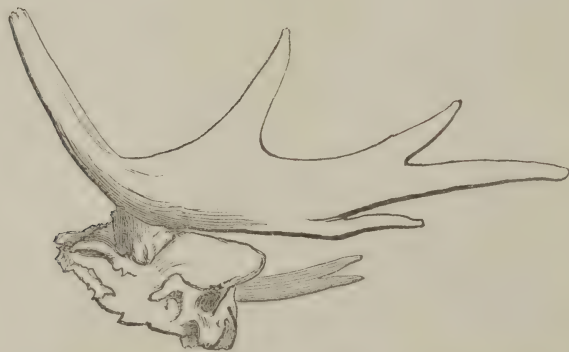


Skull of Elk (*C. alces*) found at Airleywight, Perthshire. [From above.]

adds in a foot-note, "There is a head and horns of the elk from a marl pit in Perthshire, preserved in the Hunterian Museum."

(Since this paper was read, I wrote Professor John Young, M.D., of the Glasgow University, asking for information about the specimen in this Museum; Professor Young tells me, with regard to the history of the elk referred to by Mr Smith, he was fortunate to have got quite recently, through William Kidston, Esq., 50 West Regent Street, Glasgow, the

following detailed account of its discovery, from Thomas Wyllie of Airley-wight, Esq., on whose property it was discovered. Mr Wyllie writes to Mr Kidston,—“Airleywight, 15th February 1872,—In answer to your note, I have to say that I have a perfect recollection of the finding of the elk's head and bones, as well as the head and bones of a large species of deer; they were found at nearly the same time and place, it was about 1821–22, or 23. They were got in the mossy hollow ground to the north of this house in digging for marl. The first section was moss of from 10 to 12 feet in depth; then 2 or 3 feet of an inferior kind of marl; then a bed of rich plastic red clay of about 1 or 1½ feet in thickness; and



Skull of Elk, from Airleywight, Hunterian Museum. (From left side, the skull being slightly tilted over to right side.)

last, the rich marl for which the work was done. It was between the moss and inferior marl strata, and partly in both, that the heads and bones were found. The heads were pretty perfect when got, and the horns almost entire, showing distinctly the species to which each belonged, the one evidently of the elk kind; the other just like our present red-deer heads, but of rather larger size than we now see. The bones found along with the elk's head showed it to have been a very large animal; it



must have been, at least, as tall as a good sized ox. Your father, when here on one of his visits, took the head and horns of the elk with him to Glasgow, and gave them to the Museum in connection with the College, and, if I don't forget, I saw them there in 1830. At the time these remains were found, little attention was paid to that sort of thing; they were brought up to the house here, and stuck up on the back of a rustic chair, of course exposed to all changes of weather, and soon got much decayed. I have never heard of anything of the same class being found in this district. It is now many years since we used any of the marl; indeed, it was just the last pit opened that contained the remains."

The upper part of the skull and the horns are preserved. I am indebted to Professor Young for the accompanying sketches of it, kindly taken by him for me, with the camera lucida. It shows the palmated horns, the first antler of the left horn being single and rounded (1), the second projecting outwards on each side (2), and behind, the third or palmated portion, displaying three snags on the left and two on the right horn (3, 4, 5). Professor Young has also favoured me with the following measurements:—

From vertex to occipital plane,	. . . . .	4.75 inches.
From upper margin of occipital plane to <i>foramen magnum</i> ,	. . . . .	3    "
From vertex to conical proturbance on transverse ridge,	. . . . .	2.5   "
From one proturbance to the other on transverse ridge,	. . . . .	4.25   "
From vertex to burr,	. . . . .	3.75   "
Girth on proximal side of burr,	. . . . .	{ Right 8    "
		{ Left 8.75   "
Girth of beam $1\frac{1}{2}$ in. beyond burr,	. . . . .	{ Right 6.5   "
		{ Left 6.25   "
These are chords of arcs.	Vertex to first tyne,	. . . . . Left 15.5   "
	Vertex to angle of first tyne,	. . . . . { Right 13.5   "
		. . . . . { Left 11.5   "
	„ to point of second tyne,	. . . . . { Right 20.25   "
		. . . . . { Left 19    "
	„ „ third tyne,	. . . . . { Right none.
		. . . . . { Left 20.12   "
	„ „ fourth tyne (centre),	. . . . . { Right 20.25   "
		. . . . . { Left 20.5    "
	„ „ fifth tyne,	. . . . . { Right 17.5   "
		. . . . . { Left 16.12   "
Vertex to fourth tyne along centre of palm,	. . . . .	{ Right 28    "
		. . . . . { Left 28    "

Span between tips of second tynes,		38 inches.
„ „ fourth tynes,		31 „
Breadth of palm at distal side of root of second tyne,	R. & L.	4·25 „
Four tynes on right, five on left.		
Breadth of skull in front of root of burr,		8·25 „ )

## SUTHERLANDSHIRE.

*Strath Halladale*.—I am indebted to the Rev. J. M. Joass, of Golspie, for the notice of the occurrence of the elk in this northern county. A horn of the elk is in the collection of His Grace the Duke of Sutherland, at Dunrobin Castle, and, through Mr Joass' politeness, I got the specimen for examination. It is a shed palmated horn of the left side of the head, and measures  $14\frac{3}{4}$  inches in greatest length, directly outwards along the curve of the beam, from the burr of the horn to the point of the second antler; and  $5\frac{3}{4}$  inches in circumference just above the burr. The beam is broad, expands outwards, and the horn then divides into three portions, separated by deep notches; on its anterior margin it gives off first at about  $5\frac{1}{2}$  inches distance from the burr, a flattened snag, about  $2\frac{1}{2}$  inches broad; next a broader snag or antler, the continuation of the beam of the horn, which measures  $3\frac{1}{4}$  inches in breadth, and divides at its extremity into two terminal branches, the first measuring  $14\frac{3}{4}$  inches in length from the burr of the horn, and the next  $15\frac{1}{2}$  inches, and, in the hollow or notch between this bifurcated antler and the first antler of the horn, the palm measures 6 inches across in greatest breadth. Beyond this second antler there is given off a third branch, palmated in character, which runs backwards and outwards, and measures only about 2 inches across at its base, and terminates in two short snags; it measures along the curve of the horn 16 inches in total length from the burr. (The horn is well shown in the annexed drawing, although, unfortunately, from the artist elevating too much the elongated back part, the hollowed and curved character of the rest of the horn is rather diminished in appearance). It was found about forty years ago, in the formation of a cutting made for diverting the course of the river, in Strath Halladale (a river valley running north through the eastern part of the county, and opening to the shores of the North Sea at the bay of Melvich), and was preserved by Mr Robert Rutherford, Helmsdale, in

whose possession it remained until it was recently presented, through the Rev. Mr Joass, to the Duke of Sutherland's Museum at Dunrobin. Mr Rutherford mentions that the horn was quite perfect when it was discovered. The upper part of the beam and the points of some of the tines now show marks of the teeth of rats or mice, which have gnawed



Elk's Horn (*Cervus alecs*) found in Strath Halladale, Sutherlandshire.

them; this, however, only occurred since it came into his possession, and lay neglected in a merchant's storehouse. The cutting where the horn was got was partly through clay and partly through gravel, and possibly peat; but Mr Rutherford cannot now say definitely in which of these, or at what depth it was found. Mr Rutherford was inclined to think the

ground cut through might at some former period have been part of the bed of a lake. The horns of a very large red-deer, *Cervus elaphus*, were also found in the course of the same cuttings, and are now in the Museum at Dunrobin; they display no less than some twenty-five or twenty-six points. Mr Joass writes to me that these large red-deer horns measure 3 feet along the curve on one side, and about 11 inches in circumference above the burr. Some of the local names, he says, suggest a swampy locality near a haunt of deer, *e. g.*, "Cnoc na Dalach baite," the knoll of the flooded field; "Cuil an Fhearna," Alder nook; "Clais an Daimh," Stag's swamp; "Loch na Seilg," and "Allt na Seilg," loch, and stream of the hunting. There are two Pictish towers near the place where the horns were found, and many tumuli and hut circles throughout the strath suggesting a large early population.

This horn has almost the look of the horn of a recent elk, having apparently lost little or nothing of its animal or mineral constituents. So that, judging from its appearance, we are led to consider it must either have belonged to a recent elk; or that the elk lived down to a comparatively late period of time in this most northern part of Scotland, and perhaps to a still later period here, than in the more southern localities in which its remains have been discovered.

#### BERWICKSHIRE.

*Coldingham.*—The series of Scottish instances of the discovery of the remains of the elk was begun with this county, and I now return to it before I close. In the "Proceedings of the Berwickshire Naturalist's Club, for 1860, Alnwick, 1863," there is a communication "On Fossil Antlers of the Roebuck and Gigantic Irish Elk found at Coldingham in 1859. By James Hardy (with a plate)." Mr Hardy states, that "In October 1859, while cutting a new course for a small burn, called the Court Burn, that runs through the Weaver's, or Tumbling Down Green, in Coldingham, close by the footpath that passes to the east of the glebe, the workmen came upon two antlers of the Deer family, embedded at the depth of five or six feet amidst a deposit of gravel, earth, and large boulders, similar in appearance to those collections of water-worn stones and pebbles that underlie the common soil in many parts of Berwickshire." Mr Hardy believes these fossils to be the first that have been detected in the



Berwickshire superficial gravels. One of the antlers was nearly perfect, and was that of a fully developed roe-deer (*Cervus capreolus*). The other horn Mr Hardy considered to belong to the Irish elk (*Megaceros Hibernicus*), as yet unrepresented, he says, in Scottish formations. A figure of the posterior surface of this latter horn is given in an accompanying plate: it is a portion of a palmated horn, which is broken across towards the cranial extremity of the horn, and the palm expands at the opposite extremity into four terminal snags. It measures  $2\frac{5}{8}$  by 2 inches in diameter at its broken extremity, and  $9\frac{1}{4}$  inches in circumference, and 12 inches in circumference below the branches; from this broken part to the top of the front or shortest antler it measures 10 inches; the second much about the same, or only a very little longer; the third  $10\frac{1}{2}$  inches; and the fourth or longest, to its tip, which is fractured, 14 inches. The width of the palm measured in front is 9 inches, and 10 across the back, and the breadth across the tips of the branches 15 inches. Mr Hardy states that—"The specimen bears only a general resemblance to those given of the *Megaceros* in 'Owen's Fossil Mammals, &c.,' figs. 184 to 186, and that figured in Jameson's edition of Kerr's translation of Cuvier's 'Theory of the Earth.'" I must say I agree with him in this opinion, it seems to me to bear a much closer resemblance in character to the horn found in Strath Halladale, which I have figured and described as an antler of the true elk (*Cervus alces*). The latter horn is about the same size, or only a very little longer, the horn being perfect; and differs in the longest or innermost antler which terminates in two small points. I would therefore be inclined to consider this as another example of the occurrence of the true elk in Scotland. Mr Hardy refers in a footnote to what he supposes may be another example of the Irish elk found in Scotland, but which perhaps is quite as likely to have been, as it is described, that of the true elk or moose-deer. It occurred in the adjoining county of

#### HADDINGTONSHIRE.

*North Berwick.*—In volume first of "Hill-side and Border Sketches," by W. H. Maxwell, London, 1847, at page 317, when referring to the neighbourhood of North Berwick, he says, giving the sentence as a quotation between inverted commas, but no reference to the authority from which he quotes,—"A medal of Trajan, a fibula, a patera, and a

horn of a moose-deer" were discovered. The notice is of much interest, supposing it to be correctly stated, as giving us another example in Scotland of the remains of the moose-deer or true elk found associated with human remains, and apparently of the Roman period.

#### ROXBURGHSHIRE.

*Hawick, Williestruther Loch.*—Since this paper was read, I am indebted to Sir Walter Elliot, of Wolfelee, K.S.I., for being able to describe the skull of a noble specimen of the elk (*C. alces*), which was discovered in the year 1828 in Roxburghshire. It was found, along with other bones of the skeleton, in a peat moss on the edge of a small loch called Williestruther or Willie Struther's Loch, in the valley of the river Slitrig, not far from his residence of Wolfelee. A skull of the ancient small ox (*Bos longifrons*), and some other bones, were found at the same time in the moss. In answer to my enquiry as to whether this skull was found in the peat, or in the marl under the peat, Sir Walter Elliot informed me that he was in India at the time of its discovery, and was not therefore able exactly to reply to my question, but he was inclined to believe it was found in the peat itself. The brown colour and softened character of the skull is decidedly in favour of this opinion. It is, as far as I am aware, the finest specimen of the true elk that has yet been discovered in the British islands. (See the annexed figure.)

The skull had been very perfect when discovered, the terminal bones of the face and the tips of the antlers having been unfortunately, from their softened state, broken off in digging out the skull; the large broad palmated horns stand boldly out from the sides of the skull, and the series of teeth is nearly perfect; unfortunately the lower jaw has not been preserved. The skull is large and massive. The frontal eminence between the horns being broad and prominent, although not so much so as in the Berwickshire specimen, and the central line at the sagittal suture rises up into a prominent crest, the frontal bones in front are rather roughened as if from injury, and there is no distinctly defined frontal depression; the anterior part of the bone rises upwards towards the transverse suture at the roots of the nasal bones. One of the rather short nasal bones is present, and, as in the instances mentioned by Sir John Richardson, we have a variety in the arrangement of the nasal bones.

There is here a third narrow bone,  $1\frac{3}{4}$  inch in length and  $\frac{1}{2}$  an inch in greatest breadth in the line of the transverse suture; it is pointed at each extremity, and is inserted between the extremities of the frontal bones in the extremity of the sagittal suture; it projects also anteriorly for about half an inch between the roots of the nasal bones. The actual shortness and small size of the nasal bones, as contrasted with the great size and length of the nasal cartilages and projection of the



Skull of Elk (*Cervus alces*) found at Williestruther Loch, Roxburghshire.

muzzle, is a very striking peculiarity of the *C. alces*. In this skull the nasal bones are perhaps slightly broken; they measure only 3 inches in greatest length, by rather more than  $1\frac{1}{2}$  inch in greatest breadth.

In the skull of a female elk from Norway, kindly lent me for examination by Professor Duns of the New College, the nasal bones measure  $3\frac{3}{8}$  inches in length; and the distance from the transverse frontal suture at the base of the nasal bones to the anterior extremity of the premaxillaries is  $13\frac{3}{8}$  inches, so that the length of the nasal bones is less than a third of the total length.

In a skull of the common red-deer (*C. elaphus*), the nasal bones measure nearly  $4\frac{1}{2}$  inches in length; and from the transverse suture

at the base of the nasal bones to the anterior extremity of the pre-maxillaries it measures 7 inches, the nasal bones being more than half of the whole length of the space.

In skulls of the rein-deer (*C. tarandus*), also in my possession, the nasal bones measure fully 4 inches in length, and from the transverse suture at the base of the nasal bones to the anterior extremity of the premaxillaries, is  $7\frac{1}{2}$  inches; the nasal bones being thus rather more than half of the whole length.

This elk has the superior maxillaries tolerably perfect, but the only part of the pre-maxillaries that remain is the posterior process, which is inserted into the front border of the nasal fossæ, and terminates at the distance of an inch from the nasal bones, the superior maxillary completing the rest of the border of the nasal fossa, and running up to its suture with the nasal bones; the anterior parts of the premaxillaries are unfortunately wanting. The breadth of the maxillaries at the fangs of the first and second true molars is half an inch more than in Sir John Richardson's specimen, and so far would seem to show that the face was broader in the European elk than in the American; but, as this specimen of the Scottish elk is larger altogether, it must be considered too slight to imply any difference in character. The back part of the skull is nearly perfect, and well marked in its characters, closely corresponding to Sir John Richardson's description of the American *muswä*. The surface of the occipital bone, immediately behind the occipital crest and notch, is very rough along its whole upper outline in a belt of nearly  $\frac{3}{4}$  of an inch in breadth; and the rough oval portion in the middle line for the attachment of the ligamentum nuchæ, terminates below in two short and rounded processes.

*Horns of Elk.*—The large horns spring from very short frontal processes not more than  $\frac{3}{4}$  of an inch in length, the ring of the burr measuring not more than 1 inch from the back part of the ring of the orbit, and the process itself is rough and furrowed almost like the horn beyond the burr.

In the right horn, the rounded beam, strong and rough, proceeds outwards, and, at about 6 or 7 inches distance from the burr, begins to expand into the palmated portions of the horn; the portion to the front being the first, rises up in a broad blade forwards, about  $7\frac{1}{2}$  inches broad across its base, and curves rather backwards at the top, where it terminates in three or more short snags, with very shallow notches between them. There is then a



wide and deep sinuosity or notch between it and the posterior part of the blade of the horn, the cylindrical second snag or portion being here awanting, or rather altogether taken up by, and forming the front of the next or third and large portion of the horn, which measures at this part nearly 18 inches from the burr; the third portion expands backwards and outwards, being nearly 10 inches across in greatest breadth, and terminates like the other horn in a series of short snags, which, like it, are also unfortunately all broken off (see the preceding figure).

In the left horn the burr is rugged, and beyond it the cylindrical beam passes nearly horizontally outwards, expanding in front, at about the same distance as in the right, into a large and broad palmated portion fully 9 inches in breadth at the base (in the line of the beam), which rises boldly upwards and terminates in four or more short snags with very shallow and wide notches or sinuosities between them (1). Next we have the snag which projects outwards in the line of the beam, in this instance only free for about 2 inches at its extremity, which measures 18 inches from the burr of the horn (2). Behind this snag there is the larger expanded and palmated portion, separated from the last by a large notch; it rises as it were from the whole back of the beam, about  $10\frac{1}{2}$  inches in breadth at the base, expands backwards and outwards to more than a foot in breadth, this part of the horn is also imperfect, and terminates in a series of snags along its outer border (3); unfortunately only a couple of these remain, with a very shallow notch separating the one from the other.

The series of *teeth*, premolars and molars, agrees in general character with those of the skull found in Berwickshire; except that the last premolar has not the small projecting point or cusp on its exterior surface which is present in the skull from Whitrig bog. (See figure, *ante*.) The first and second molars of the right side display the distinct isolated ring of enamel, which, however, is formed as a loop of the enamel in the third molar; in the teeth of the left side of the superior maxillary bone the isolated ring exists only in the first molar, and as a loop of the enamel in the other two molars.

The following table gives some of the measurements of this cranium:—

	Ft.	In.
Length from the occipital notch to the transverse suture at root of the nasal bones, . . . . .	0	$10\frac{1}{4}$

	Ft.	In.
The nasal bones in greatest length, . . . . .	0	4
Length from transverse suture to premaxillary bone, . . . . .	0	4 $\frac{3}{4}$
Length from occipital notch to coronal suture behind frontal eminence, . . . . .	0	4 $\frac{1}{4}$
Length from occipital notch to inner margin of occipital foramen, . . . . .	0	4 $\frac{3}{4}$
Greatest breadth of temporal bones at projection behind auditory foramen, . . . . .	0	6
Breadth across frontal bone between burrs of horns, . . . . .	0	6 $\frac{1}{4}$
Breadth across forehead between burr and back part of orbit, . . . . .	0	7 $\frac{3}{4}$
Breadth across orbits in the line of the supra-orbital foramina, . . . . .	0	7
Breadth of superior maxillary bones at the projections at the fangs of the second true molars, . . . . .	0	6 $\frac{1}{4}$
Breadth of superior maxillaries at the infra-orbital foramina above the first premolars, . . . . .	0	3 $\frac{1}{4}$
Length of series of molar teeth, . . . . .	0	5 $\frac{3}{4}$
Breadth of palate in front between the first premolars, . . . . .	0	2 $\frac{1}{2}$
Breadth between the last molars, . . . . .	0	3 $\frac{1}{2}$
Horns—Circumference of beam above burr—right horn, . . . . .	0	6 $\frac{1}{4}$
Do. do. left horn, . . . . .	0	6 $\frac{1}{2}$
Length from extremity of the second snag, or portion of horn, to corresponding extremity of other horn (in a straight line), . . . . .	3	5
Length from sagittal suture to extremity of right horn, . . . . .	1	8 $\frac{1}{2}$
Do. do. left horn, . . . . .	1	9
Greatest breadth of right horn, from front to back across the palm (in a straight line), . . . . .	1	3
Greatest breadth of left (both imperfect), . . . . .	1	7
Breadth of occipital condyles across the back part, nearly . . . . .	4	0
The condyles are about $\frac{1}{8}$ of an inch apart in front, and about $1\frac{1}{2}$ inch behind.		

On comparing this large and comparatively perfect skull with that of the younger animal found at Whitrig Bog, I find very slight differences in the relative proportions of the skull. The principal one, however, is in the space between the burrs of the horns, or the breadth of the forehead, which, in this large horned specimen, measures only 6 inches across, being shorter or narrower than in the other, which measures 7 inches. The frontal processes are also rather shorter in this older animal. Can it be that as the horns increase in size and weight with age, they are developed more closely together from the frontal eminence, and thus bring their weight more to the centre of head, which is thus perhaps better balanced, and more easily carried by the animal?

I may also mention that the skull has had two large round holes recently bored through its forehead, to enable it to be put up as an ornament in the hall at Wolfelee. (These holes are not shown in the accompanying figure.)

#### SELKIRKSHIRE.

*Selkirk Parish—Oakwood, on the Etterick.*—To the courtesy of the Right Honourable the Lord Polwarth, I am indebted for being able to record an example of the true elk, *C. alces*, found in this county. It was discovered in a bog on his Lordship's property of Oakwood, a few miles up the river Etterick above the town of Selkirk, and was brought, upwards of thirty years ago, by the Hon. Francis Scott to Mertoun House, Roxburghshire, where it is still preserved. The specimen consists of the upper part of the cranium with the horns, the nasal bones still remaining. The horns are not large, but are distinctly palmated. The right horn is the most perfect, the rounded beam passes outwards from the frontal bone, and soon expands into a palmated form, giving off a broad first antler in front, which terminates in three snags or points running upwards, forwards, and outwards; the second antler or continuation of the beam then runs outward, and rather upwards; and behind it you have the third antler, which runs backwards and upwards, forming the broader upper part of the palm of the horn; one snag remains on the outer side of the palm, but the rest are unfortunately all broken off. The left horn is of much the same character, with a broad snag to the front; then the second, a rounded snag or antler, or terminal part of the beam, which is broken; and behind it the third or broad palm of the horn, the snags being all broken off. The skull measures in length, from the occipital notch to the transverse suture at the root of the nasal bones,  $8\frac{3}{4}$  inches. The nasal bones are nearly 4 inches in length, and the two together measure about  $4\frac{1}{4}$  inches across at the upper part, and 3 inches across at their distal extremities. The skull measures between the burrs of the horn  $7\frac{1}{4}$  inches across, and between the supra orbital foramina  $4\frac{1}{2}$  inches.

Horns, greatest length from burr to extremity of second snag or terminal part of beam—Right, 1 foot  $4\frac{1}{8}$  inches; Left (broken),  $11\frac{1}{2}$  inches. Greatest breadth from front of first or front antler, across the palm to back part of expanded third antler—Right, 1 foot 5 inches; Left, 1 foot  $2\frac{1}{2}$  inches.

In the description of Selkirkshire, written by Mr William Laidlaw, which was published in the "Edinburgh Encyclopædia" of Sir David Brewster, Edinburgh, 1830, it is stated:—"It is likely that in ancient times the urus had been common, for skulls of that animal have frequently been found in the marl mosses along with those of the stag, and another extinct species of deer with palmated antlers, of a size which seem to indicate the bearers to have been as large as a blood horse. (Probably the same as the deer of Saonme of Cuvier)."

*Yarrow*.—The Rev. James Russell, A.M., in his account of the Parish of Yarrow, dated 1833, and published in the "New Statistical Account of Scotland," Edinburgh, 1845, states that:—"The skulls of the urus, described by Cæsar, and an extinct species of deer with large palmated antlers have been found imbedded in the marl mosses."

#### PEEBLESHIRE.

*Kirkurd*.—In the account of this Parish by the Rev. Alexander Kerr, dated 1839, and published in the "New Statistical Account of Scotland," it is stated that—"Not long ago, in digging for marl in the Mount bog, several horns of the elk, in a high state of preservation, were found."

#### II. ENGLAND.

##### NORTHUMBERLAND.

*North Tyne—Chirdon Burn*.—At a meeting of the Tyneside Naturalist's Field Club, held on 22d December 1861, a paper was read "On the Fossil Remains of some recent and extinct Mammalia found in the Counties of Northumberland and Durham. By Richard Howse." A series of horns and bones of various animals were exhibited, including the true elk and the Irish elk. The paper is published in the Transactions of the Society, Newcastle-upon-Tyne, vol. v. p. 111, 1863. Mr Howse stated that he now records, for the first time, he believes, the occurrence of the true elk in the fossiliferous deposits of England. He says,—“The former existence of the true elk or moose deer of the Canadians in our district, indeed I may say, in England, for its occurrence in any of the fossiliferous deposits of South Britain has not yet been recorded, rests on the authority of a very fine antler presented to the Natural History Society by Mr Walter Dodds, Hope



House, North Tyne." Dr Charlton, through whose kindness it was presented to the Museum, informed him "that it was found in Chirdon Burn, near the bottom of the recent peat formation, resting partially on the coarse gritty marl formed by the weathering of the subjacent strata." The horn, which is a shed horn belonging apparently to the right side of the skull, shows, judging from the figure given of it in an accompanying Plate, a short rounded beam which expands into a palmated portion in front, a smaller portion projecting outwards more in the line beam itself, and another larger and more expanded but unfortunately broken portion running backwards, and now terminating in three points or snags. The horn, however, is considerably broken; it is of a dark brown colour, and "measured, when perfect, from tip to tip, 2 feet, and from the burr to the farthest point about 2 feet 10 inches, round the burr 10 inches, and round the beam nearly 8 inches." Mr Howse also states—"The perfect appearance of the burr or boss shows it to have been shed, and the number of points or digitations indicate it to have belonged to an individual six or seven years old, and therefore immature, as it is said the elk does not complete the growth of its horns till the fourteenth year." It is also mentioned at p. 190 of the same vol. of the Transactions; that on a recent visit to Newcastle, Professor Owen stated "that this was the first and only proof he had seen of the occurrence of the moose in the fossiliferous deposits of England." Mr Howse refers in this paper to the Proceedings of the Berwickshire Club, 1860, and the description and figure by Mr Hardy of the antlers of the deer found at Coldingham, which he believes to belong to the great Irish elk. Mr Howse says—"We are inclined to think, from the drawing which accompanies this paper, that it belongs to the true elk." I have already referred to this elk found in Berwickshire, which I agree with Mr Howse in considering as an instance of the occurrence of the *Cervus alces*, rather than of the *Megaceros Hibernicus*.

#### ESSEX.

*Walthamstow—River Lea.*—The next instance of the discovery of the elk is described by Professor Richard Owen, in the "Geological Magazine," vol. vi. No. 9, Sept. 1, 1869, p. 389, in a "Note on the occurrence of Remains of the Elk (*Alces palmatus*) in British Post-Tertiary Deposits."

Professor Owen states, that at the publication of his "British Fossil Mammals (1846)," he had not obtained satisfactory evidence of the previous existence of the true elk in Britain. The first was that recorded in the "Transactions of the Tyneside Naturalists' Club, 1863. He was "now able to add to that notice, evidence of the extension of the localities of true elk's remains as far south as Walthamstow, Essex."

Excavations were being made for the East London Water Works, and these exposed sections of an old bed of the river Lea, near Walthamstow, "In this bed, at from 5 to 8 feet in depth have been obtained remains of *Bos longifrons*, *Capra hircus*, with remarkably fine horn cores, part of an antler 2 feet 8 inches long, of a reindeer (*C. tarandus*), and in another kind of deposit, as evidenced by the darker colour of the bones, and a thin partial coating of limy matter, were obtained the humerus, antibrachium, and metacarpus of an elk, closely corresponding with those of the existing Scandinavian species (*Cervus alces*, Linn; *Alces palmatus*, Auct.; and *Alces Europæus*, Hamilton Smith.) (I have not been able to discover any distinctive character of specific value between the North American and Scandinavian elks.) The length of the humerus is 1 foot 3 inches; the least circumference of the shaft, 4 inches 10 lines; the length of the antibrachium is 1 foot 7 inches; its least circumference, 5 inches 3 lines. The ulna is ankylosed to the radius along a great part of its distal half. The metacarpus is 1 foot 9 lines in length, and 4 inches in circumference. The characters of these bones in the peculiar long-legged kind of deer called 'Elk' or 'Moose' differentiate them readily and strongly from those of the Bovines, of the *Megaceros*, and of the Wapiti, or other large round-antlered deer. They are perhaps more satisfactory evidences of *Alces* than portions of antler."

I may quote here from Sir John Richardson's Zoology of H.M.S. "Herald," where he states that in the moose deer "The coalesced third and fourth *metacarpal* bones form the single cannon bone, which is a third longer than its homologue in a full-sized ox; and though narrower in a lateral direction, has a greater anconothenal diameter. . . . The length of the cannon bone from the carpal joint to the most distant curve of the ridges between the metacarpal trochleæ is 13 inches 4 lines. The *metatarsal* bone of the *muswa* is more slender, but above one-third

longer than the corresponding bone of a full-grown domestic ox. In its shape it differs little from its homologue in the rein-deer, except that the groove on the popliteal surface is wider and shallower. The groove on the rotular surface is equally marked in both species. The extreme length of the metatarsal is 16 inches 3 lines."

Professor Owen goes on to say, in the paper which I have quoted above, that "Professor Gervais writes doubtfully on such grounds in regard to the *Cervus alces* as a French fossil." ("Palæologie Française," 4to, p. 80.) Professor Owen also reminds us in the conclusion of his paper, that "we owe to Julius Cæsar the valuable record of the existence of both the rein-deer (*Bos-cervus*) and the elk (*Alces*) in the Black Forest and coterminous part of Germany, at the period of his campaign in that country and in Gaul. (De Bello Gallico, Lib. VI. cap. xxvi. p. 320. Ed. Ludg. Bat. 1737.)" In the same part of the "Geological Magazine" in which Professor Owen's paper is published, there is an interesting communication on "The Fresh-water Deposits of the Valley of the Lea, near Walthamstow," by Mr H. Woodward, p. 385. He gives a long list of the various animal remains from the peat and shell marl of the forest, and this list includes that of the elk described by Professor Owen. He also describes many ancient relics of man, osseous remains, and implements in stone, bone, and bronze. These have been examined by A. W. Franks, Esq., A.M., F.S.A., Keeper of the Ethnological Department of the British Museum, and include weapons of the late Celtic period, as an iron sword with bronze sheath, dagger, &c., and various late Celtic earthen pots, some hand-made, others made on the wheel, &c. It is not stated, however, that any human remains were found associated with or near those of the elk, so as to suggest the idea of their being of contemporary age.

#### STAFFORDSHIRE.

*Wetton.*—The only instance of the occurrence, in England, of the remains of the elk, *C. alces*, actually associated with man with which I am acquainted, is incidentally mentioned in a volume entitled "Ten Years' Diggings in Celtic and Saxon Grave Hills, in the Counties of Derby, Stafford, and York, from 1848 to 1858, by Thomas Bateman. London, 1861." At page 298 of this work we have a detailed list given of the "Animal Remains found in the Tumuli associated with Works of Human

Art." This list includes the Elk (!) *Cervus megaceros*, in a subsequent note however, it is added, that this was the true elk :—

"A portion of a large palmated horn, found with Romano-British remains near Wetton (Staffordshire), at least double the size of the antler of the fallow-deer, may possibly be assigned to the elk ; but it is proper to state, that it does not reach the magnitude of a large horn from the extinct Irish elk, in the collection at Lomberdale, though it resembles it in form, so far as its fragmentary condition admits of comparison." "Since the above note has been in type, the horn has been ascertained to be that of the German elk."

I quote at full length the details given of this interesting discovery :—

"MR CARRINGTON UPON A ROMANO-BRITISH SETTLEMENT NEAR WETTON, STAFFORDSHIRE."—(After various details of the discovery in certain fields in the village of Wetton, known by the name of the Burrough Hole, of the remains of pavements and floors, buildings, &c., bones of stags, horses, and other animals, &c., so as to constitute, Mr Carrington says, the locality the very Pompeii of North Staffordshire,) he farther states, at p. 201—

"Here—as is not unfrequently the case in more serious and weighty matters—there was but a step between the living and the dead, for on the 10th of August 1852 we found, by continuing the excavation along the surface of the rock, that we were gradually extending deeper and deeper as the rock inclined downwards ; the earth, also, that we had to remove became darker in colour as we advanced, and was mixed with ashes and large loose stones. After we had removed some large blocks, a human skull appeared upon the rock, by which it was evident that we had unawares broken into a cist, which by careful examination was found to contain the skeleton of a female—the femur measuring seventeen inches, and the skull indicating a person of middle age—which lay on the right side, with the head towards the south, and the feet to the north. The bones, with the exception of the legs, which were slightly bent back, were extended at length by the east side of the grave, which was formed by a wall built of flat stones, the uppermost of which were very large, and almost reached up to the surface of the land. A flat stone was set up edgeways at the head, as is not unusual in barrows of a much more remote antiquity ; and close to it was a broken upper millstone. The bones were embedded in compact dark-coloured earth, intermixed with charcoal and burnt bones, and the body had been interred with three small beads, two of lilac-coloured, and one of blue glass, and a plain bronze ring fibula, 1½ inches diameter, about the neck, as they were discovered upon removing the skull. An iron awl, several iron nails, and pieces of stag's horns



and other animal bones, were found about the skeleton. Some of the horns have been sawn across, particularly a very large palmated one (*the elk's horn referred to*): a tine from another had been neatly sharpened for some purpose. Another strong iron awl was found beneath the uppermost stone of the wall guarding the east side of the grave, the other sides of which were fenced out by large stones, extending almost up to the surface, 2 feet 6 inches above the bottom of the grave. The surrounding ground, except on the north-west, had been cut down to the rock, about 6 inches lower—a circumstance which induced us to continue the search, in hope of finding other interments, to a further distance of 8 yards, finding throughout the whole extent abundance of ashes, boars' tusks, and other bones, as well as a few articles of greater interest, comprising the skull of a stag, a neatly squared sharpening-stone, between 2 and 3 inches square, and two coins in small brass, one of them of the Constantine family—reverse, *GLORIA EXERCITUS*, two soldiers holding standards; the other is one of the minute imitations of the currency of the Lower Empire, in such poor condition as to be quite illegible.”—P. 202.

When residing at Buxton last September, and learning from my guide-book that strangers were admitted to see the collection of antiquities at Lomberdale House, I made a trip, on the 3d of the month, by Bakewell to Youlgrave, near which Lomberdale House is situated, in expectation of seeing the valuable collection of British Antiquities made by the late Mr Thomas Bateman, and in particular, examining this portion of elk's horn found along with human remains. On reaching Lomberdale House, however, I was not fortunate enough to find any of the family at home, and was told by the servant that no person had been admitted to see the museum since the death of the late Mr Bateman; so that the principal object of my excursion turned out a decided failure.

#### DURHAM.

*Hartlepool*.—Dr David Page (now Professor of Geology, College of Science, Newcastle-upon-Tyne) informed me that remains of the true elk had been discovered in the submarine forest at East Hartlepool, and were now, he believed, preserved in the Museum there. Dr Page could not inform me where a notice of the discovery was published; accordingly, I wrote to the keeper of the Museum asking for information on the subject, but unfortunately have not as yet been favoured with any reply to my inquiries (see note, page 345).

In the paper by Mr Richard Howse, already referred to (Tyneside Nat. Club, vol. v. 1863), I find that "a fragment of a skull with the horn cores apparently belonging to the *Bos longifrons*, was found during the excavation of the innermost dock at West Hartlepool, and is preserved in the museum there, with remains of a mammoth (a small tusk), red-deer, and human beings" (p. 121), from the same locality.

#### YORKSHIRE.

Since this paper was read, I have had an opportunity of reading an interesting paper by Mr Edward Tindall, of Bridlington, entitled "Remarks on the Extinct Fauna of the East Riding of Yorkshire," published in the "Proceedings of the Geological and Polytechnic Society of the West Riding of Yorkshire," for 1869, Leeds 1870; where he describes two instances of the occurrences of the true elk (*Alces malchis*) in Yorkshire. Unfortunately he gives no detailed accounts of the specimens themselves. The first of these was at

*Thorpe Hall, near Bridlington.*—"In the spring of 1822, as some workmen in the employ of Messrs G. & W. Tindall, nursery and landscape gardeners, of Beverley, were employed in digging out some drift-gravel to construct a lake at Thorpe Hall, near Bridlington, the seat of Lord Macdonald, they found, at the depth of about  $4\frac{1}{2}$  feet from the surface, some of the bones and horns of the elk (the largest of the Cervine family, which still exists on the surface of the globe), and also a fine horn of the stag or red deer." The next at

*Carnaby, near Bridlington.*—"In the month of February 1868, a horn and the occipital portion of the skull of a female (?) specimen of the elk were found, during the process of draining, in a peat bog, about 2 feet below the surface, on the property of Sir George Cholmley at Carnaby, near Bridlington; and it is very probable the remaining parts of the skeleton of one of these animals may still be entombed in the same locality."

Mr Tindall refers to other and earlier instances of the supposed occurrence of the elk in England, as well as to "the first authentic instance" found at Chirdon Burn and recorded in the "Transactions of the Tyne-side Naturalists Field Club" for 1861. He believes, however, that this

Yorkshire specimen found in 1822 is "the first reliable example on record of the *moose* occurring in Britain," p. 11.

#### ISLE OF MAN.

*Peel*.—In the Museum of the Leeds Philosophical and Literary Society, as I was kindly informed by Dr David Page, there is preserved the skull of an elk, *Cervus alces*.

I am indebted to the politeness of L. C. Miall, Esq., for a sketch of the specimen, which consists of the upper part of the cranium, with well-developed, palmated horns, and was found in a peat bog near Peel, on the west coast of the Isle of Man. Each horn gives off at some distance from the burr, in front of the beam an antler, rising upwards and forwards, which terminates in two points or snags; next a longer and rounded second antler, running outwards in the line of the beam of the horn, and beyond and behind this, the large portion, or third antler, running backwards and outwards to form the great palm of the horn. Mr Miall has also favoured me with the following measurements:—Length from sagittal suture of skull to burrs of horns,  $3\frac{3}{8}$  inches length (in a straight line) from the distal snag of first antler to the point of the corresponding antler of other horn, 2 feet 11 inches; length from point of second antler (greatest length of horn) to that of opposite side, 3 feet  $10\frac{1}{4}$  inches. Length from burr, in a straight line, across to posterior and interior extremity of palm of same right horn, 2 feet  $0\frac{1}{2}$  an inch. Length from posterior and inner extremity of palm of horn to corresponding point of other horn, 2 feet 8 inches. Circumference of horn at burr, 10 inches; circumference of beam above burr,  $6\frac{1}{4}$  inches. Greatest breadth of posterior antler or palm of horn,  $10\frac{1}{2}$  inches.

These horns were purchased for the Leeds Museum about three years ago, at the sale of Crosthwaite's Museum, Keswick.

#### III. WALES.

CAERMARTHEN, *Llandeibie*.—A lower jaw of the elk was discovered in 1861, by Mons. Lartet, among other mammalian remains in a cave at Llandeibie, in South Wales. It is now, I understand, preserved in the Museum at Oxford.

## IV. IRELAND.

## TYRONE.

*Stewartstown*.—As long ago as 1837, Mr W. Thompson, Vice-President of the Natural History Society of Belfast, exhibited to the Zoological Society of London the bones of various animals got in peat-bogs in Ireland. Among these he showed a horn of the true elk, *Cervus alces*, Linn., which was found in a peat-bog of the county Tyrone. "The number of snags upon the horn, and its dimensions, show that it belonged to a very old animal; its breadth, measured in a straight line across the centre, without the curve being reckoned, is 35 inches; its height, similarly estimated in a straight line from the base,  $26\frac{1}{2}$  inches. In the *Annales des Sciences Naturelles* for 1835, t. iv. (New Series), portions of the horn of the *Cervus alces* are figured and described by M. Christol, from specimens found in a fossil state at Pézénas."—*Proc. Zool. Society of London*, part v. p. 52, 1837.

This horn of the elk was stated by Mr Thomson to have been found by a relative of his own. It was dug out of a bog near Stewartstown, and was presented to the Natural History Society of Belfast. In a "Catalogue of the Fossil, or rather Sub-Fossil Mammalia of Ireland," by Robert H. Scott, M.A., appended to the Annual Report of the Geological Society of Dublin, read at the anniversary meeting, February 10th, 1864, and published in their Journal, vol. x. part 2, 1864, p. 149. It is thus referred to in a letter by Mr George C. Hyndman to Robert Patterson, Esq., and sent by him to Dr Carte:—"I have examined the elk's horn in the Museum, and I think the freshness of it, and the perfection of the points or tangs, forbid the supposition that it could ever have remained any lengthened time in the bog. Besides the paint upon it, mentioned by Thompson, there is a round hole bored through the broad plate of the horn, showing that at some period it had been put up as an ornament in some person's hall. It must have got into its position in the bog by some accident." "This opinion has received additional confirmation from Mr Bernard H. Ross, F.R.G.S., of the Hudson's Bay Company's Service, who pronounced it to be a North American specimen, and of no very great antiquity."

In the account of the skull found at Williestruther Loch, I stated that



holes had been bored through its forehead to facilitate its being hung up as an ornament; this, however, taken by itself, of course in no way invalidated the true history of the specimen.

As this is, I believe, the only recorded example of the presence of the true elk in Ireland; unless the state of the horn be taken as a proof of its comparatively recent existence there, it must apparently be considered doubtful, at least for the present, whether it should really be included in the catalogue of fossil mammals found in that country.

It seems to me that from the very abundance of the remains of the *Megaceros* or Irish Elk throughout the country, and the great size of their horns in many instances, there is a risk that specimens with small horns might be neglected as of little value by their unlearned discoverers, and in this way the occurrence of the true Elk, *C. alces*, may possibly have been overlooked in Ireland.

#### GEOLOGICAL RANGE OF THE ELK (*C. ALCES*).

Now that the existence of the elk as one of the ancient *feræ naturæ* of our country, is fully recognised by naturalists, there can be no doubt that its remains—the distinctive skull, horns, and teeth, or characteristic long limb bones, described by Professor Owen and Sir John Richardson, will probably be more frequently detected among the many remains of animals found in different parts of the country.

Sir John Richardson, in his Zoology of "H.M.S. Herald," when describing the bones of the elk found in the same clay-bed with those of the *Elephas primigenius*, *Equus fossilis*, *Cervus tarandus*, *Ovibos moschatus*, fossil musk-ox, *Ovibos maximus*, *Bison crassicornis*, heavy-horned fossil bison, &c., in the ice-cliffs of Escholtz Bay, in Arctic America, says:—"The bone has the same dark hue as the other fossils, but is compact and weighty, having lost little of its animal substance. Its cells are filled with the same micaceous sandy loam that formed the general matrix of the bones, and phosphate of iron has formed in minute grains in many parts of the broken surface. Were it not that the moose deer still range to the Arctic Sea, and that its bones are not enumerated among the spoils of animals of the drift period dug up elsewhere, I should have had no doubt of these fragments of the skull of a moose being equally fossil with

the other parts of the collection. I have had no opportunity of comparing the large deer bones mentioned by Dr Buckland with those of the moose, as this would have settled the matter."—(P. 20.)

As far as the notices I have been able to collect at present guide us, the geological range of the existence of the elk would appear to be probably from the time of these glacial deposits (?) at least in America. In Britain the elk can be traced from the Post-Tertiary and the Post-Glacial Deposits, as in the cave of Llandebie, the old river gravels of Essex, and the gravel beds of Berwickshire, through the marl-beds, and the peat-bogs; shall I say, along with the bronze weapons of our early Britons at Duddingstone Loch, down to its occurrence apparently associated with Roman remains at North Berwick, and also in the graves of the ancient inhabitants of Staffordshire, along with human remains of the Romano-British period.

#### GEOGRAPHICAL RANGE OF THE ELK (*C. ALCES*).

Dr J. E. Gray, of the British Museum, has divided the Family *Cervidae* into those which inhabit cold or snowy regions, and those which inhabit warm or temperate regions. The deer which are the inhabitants of the cold regions are the reindeer, *C. tarandus*, and the elk, *C. alces*, or *Alces malchis* of Gray. Those of the temperate regions include three principal divisions, the first of which is the group to which the red deer belongs. The reindeer seems able to live in the most northern tracts of country, the barren, treeless wastes that border the Arctic circle. The muzzle of the reindeer is entirely covered with hair, but in the moose a small space near the nostrils is left bare of hair; and as this latter deer is more purely than the reindeer a feeder on the twigs of various trees—the willow, the birch, the poplar, &c.—he is found in the swampy forests of the north, and straying down the wooded banks of rivers, even to a very high northern latitude.

In the New World, Sir John Richardson tells us, in the present day the moose deer ranges from the valley of the St Lawrence to the Arctic Sea, keeping in the wooded districts, being little known on the prairies, and little seen in the "barren grounds" of the north. It frequents willow thickets, and follows these along the banks of rivers, beyond the woods,

up to the 69th and 70th parallels. It would seem, however, that formerly its range extended much farther to the southwards than at present, while even yet it is described by sportsmen as being abundant south of the St Lawrence, in Nova Scotia; we may, therefore, assume that it still exists in America, from the latitude of about 45°, northwards towards the Arctic Sea, even to the 69th and 70th parallels.

In the Old World the range of the elk has, of course, been much more limited since historic times. At the present day his range, even in Scandinavia, is much diminished; and, curiously enough, we find a northern naturalist, Mr Nilsson, stating (I quote from Mr L. Lloyd's "Field Sports of the North of Europe," 2d edit., London, 1831, vol. ii. p. 327) that "The elk cannot endure so cold a climate as the stag, the 64th degree of latitude being the extreme limit at which he is met with in the Scandinavian peninsula." It still exists in greater or less abundance, according to locality, across the whole of the northern parts of the Old World, and, according to the testimony of various travellers, seems to range in Asia as it does in America, from about the same latitude of 45°, where, however, it is rare, or perhaps a little more to the north, than in the New World; and increases in number in particular localities as we proceed northward, towards the borders of the Arctic circle. In Europe, again, from the increased civilisation and abundance of population, its limits have been greatly reduced; it exists now only in the more northern districts, although it seems formerly to have reached here also a somewhat similar southern limit.

I have quoted, from Professor Owen's paper, the existence of the elk in Central Europe in the days of Julius Cæsar, and from Mr W. Thompson's, the fact of its remains having been found at Pézenas, in the very south of France, in the Department of Herault. Professor Gervais, however, as quoted by Professor Owen (*ante* p. 335), writes doubtfully in regard to "*Cervus alces*" as a French fossil:—"Cette espèce paraît avoir laissé des débris fossiles en France dans les terrains diluviens. M. de Christol y a rapporté quelques portions de bois extraites des sables diluviens des Riège, pres Pézenas, que nous attribuerons à notre *Cervus martialis*." ("Paléontologie Française," 4to, p. 80.)

The recent discoveries of the lake dwellings of Switzerland have also made us acquainted with its presence in a great number of these ancient

sites of human dwellings. Professor Rüttimeyer of Basle, who has published a work on the Fauna of the Lake Dwellings, has furnished a complete list of the animals found, to Mr J. E. Lee, the English translator of Dr F. Keller's "Reports on the Lake Dwellings of Switzerland, London, 1866," 8vo; and in this list, besides the red deer and the roe, which occur almost everywhere, we find remains of the true elk, *Cervus alces*, mentioned as having been discovered at Robenhausen, Meilen, Moosseedorf, Wanwyl, Möringen, Concise, and Bienne; all lying within the southern limits of latitude already referred to as the region formerly inhabited by the elk.

Sir John Lubbock, in his "Pre-Historic Times," London, 1865, says:—"We have no notice of the existence of the elk in Switzerland during the historical period, but it is mentioned by Cæsar as existing in the great Hercynian forest; and even in the twelfth century it was to be met with in Selavonia and Hungary, according to Albertus Magnus and Gesner. In Saxony, the death of the last is recorded as having occurred in 1746. At present it inhabits Prussia and Lithuania, Finland and Russia, Scandinavia and Siberia, to the shores of the Amoor."

I may also notice the evidence of the occurrence of the elk in a more southerly range than any previously ascertained, detailed by the Rev. H. B. Tristram, M.A., in "The Land of Israel, a Journal of Travels in Palestine," London, 1865. In a bed of stalagmite, near Beyrout, bones, teeth, and flints were found. "The latter consist almost entirely of elongated chips, with very sharp edges."

"The bones are all in fragments, the remains, in all probability, of the feasts of the makers of the rude implements. Four of the teeth have belonged to an ox, somewhat resembling the ox of our peat-mosses, and one of them, probably, to a bison. Of the others, some may probably be assigned to the red-deer, or reindeer, and another to an elk. (*The determination of the teeth was made by Mr W. Boyd Dawkins.*) If, as Mr Dawkins considers, these teeth are referable to those now exclusively northern quadrupeds, we have evidence of the reindeer and elk having been the food of man in the Lebanon, not long before the historic period; for there is no necessity to put back to any date of immeasurable antiquity the deposition of these remains in a limestone cavern." (P. 11.)

From the various remains found in Britain, I have shown that the true elk formerly existed, may I say, from Strath Halladale, Sutherlandshire,



in the extreme north of Scotland, down through Perthshire, and Berwickshire, to Selkirk and Roxburghshire, in the south of Scotland. Then in England, from Northumberland in the north, through Yorkshire and Staffordshire in the middle, Wales, and the Isle of Man, to Essex in the south. So that I have now been able to trace its former presence through almost the whole extent of our island.

(Note to page 337.)

DURHAM, *Hartlepool*.—Mr William Weaver, Hon. Sec. to the Museum at Hartlepool, has since kindly replied to my inquiries respecting the remains of the elk, which, he says, were found while excavating the old dock (the Victoria Dock). Mr William Davison, late secretary of the Hartlepool Dock and Railway, who was there during the excavation of the dock, informed him that remains of the true elk were found, and he had them in his possession for some time; but afterwards, he thinks, he presented them to Mr Backhous of Sunderland.

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For comparison with, and illustration of these notices of the true elk, *Cervus alces*, I append the following note:—

#### XIV.

NOTE OF THE REMAINS OF THE IRISH ELK (*MEGACEROS HIBERNICUS*), FOUND IN SCOTLAND. BY JOHN ALEXANDER SMITH, M.D.

It may be supposed that some of the early instances of the occurrence of the elk, to which I have referred in my paper on the true elk, *Cervus alces*, in Scotland, from the scantiness of the details given of the remains themselves, may possibly have been in reality those of the Irish elk, *Cervus megaceros*, Hart, the *Megaceros Hibernicus*, Owen. I have, therefore, thought it advisable to notice here the very few authentic instances recorded of the occurrence of this stately animal, the Irish elk, in Scotland.

Numerous instances have been put on record of the occurrence of this animal in the Isle of Man, in England, and especially in Ireland, where it was first described and figured as a great American Moose Deer, formerly common in Ireland, by Dr Molyneux, in the Philosophical Transactions, London, 1697.

## AYRSHIRE.

*Maybole*.—The first undoubted example, as far as I am aware, of the occurrence of the Irish elk, *Megaceros Hibernicus*, recorded in Scotland, was published in "The New Statistical Account of Scotland," vol. v., Edinburgh, 1845. It occurs in the account of the parish of Maybole, Ayrshire, by the Rev. George Gray, p. 353, with the date 1837:—

"Towards the southern boundary of the parish there are a series of hollows between the undulations of the sandstone, some of them still in the state of lochs, and others of marshes. On draining some of them, it has been found, that, after penetrating a bed of soil and moss of about 8 to 10 feet in thickness, great deposits of marl occur, containing an immense number of organic remains. It is to be regretted, that, at the time the marl was excavated, no greater attention than what curiosity prompted was directed towards these interesting relics. Portions of different animals have, however, been preserved; and for the following notice of the heads of the elk and *bos* in the possession of Mr Kennedy of Drummellan, I am indebted to Dr M'Tyer of Redbrae.

"The fossil head of the *Cervus megaceros* differs from the specimen in the Museum of the Royal Society of Dublin, in the head being larger and the horns a little less, probably from the Drummellan animal having been aged. The dimensions of the two specimens are as follows:—

	Dublin specimen.		Drummellan specimen.	
	ft.	in.	ft.	in.
Length of head, . . . . .	1	8 $\frac{3}{4}$	1	11
Breadth between orbits, . . . . .	0	10 $\frac{1}{2}$	0	10 $\frac{1}{2}$
Distance between the tips of horns, measured by the skull, . . . . .	11	10	10	4
Do. in a straight line across, . . . . .	9	2	7	5
Length of each horn, . . . . .	5	9		0
Greatest breadth of palm, . . . . .	2	9	2	7
Circumference of the beam at the root of the brow antler, . . . . .	1	0 $\frac{3}{4}$	1	1 $\frac{1}{2}$
Diameters of orbit, . . . . .	0	0	0	2 $\frac{3}{4}$ by 2 $\frac{1}{2}$

"The other head appears to have belonged to a variety of *Bos taurus*, the forehead being concave. It measures 10 inches between the horns, and 13 $\frac{1}{2}$  inches round the bole of the horn. Horns of the *Cervus elaphus* were also found."

This variety of *bos* was evidently the *urus*, or *Bos primigenius*.

## RENFREWSHIRE.

*Crofthead*.—Sir William Jardine, Bart., kindly informed me of another instance of the occurrence of the Irish elk, and stated that he was not aware of any other place in Scotland where it had been found.

The remains of this *Megaceros Hibernicus* were discovered near Croft-head, in a cutting of the line of railway called the Crofthead and Kilmarnock Extension, in Renfrewshire, the adjoining county to Ayr, in which the first specimen was found. They were, like the Maybole specimen, associated with the *Bos primigenius*, and in addition with remains of the horse. Sir William Jardine did not know what had become of these remains.

I was fortunate in writing to Mr John Young, of the Hunterian Museum, Glasgow, asking for information about the *Cervus alces* in the Museum, to learn from him that this specimen of the Irish elk was now preserved in the Hunterian Museum, and that a detailed account of its discovery, and the deposits in which it was found, had been brought by him before the Glasgow Geological Society on the 11th November 1869, and was published in vol. iv. of their Transactions, Glasgow, 1871. An abstract of his paper is also published in the Geological Magazine, vol. vii. p. 137, London, 1870, from which I quote various details. Mr Young stated that Professor Young, M.D., and himself had examined the bones, and found that two were portions of the horns of the *Megaceros Hibernicus*, consisting of the left beam or lower portion of a shed horn of average size, and the brow snag of, possibly, the other horn of the same deer, and ten belonged to the horse, the latter being about one-third smaller than the average size, but probably of the common species, *Equus caballus*, and were discovered in a lower series of the deposit, some 25 feet below that in which the remains of the *Bos primigenius* and *Megaceros* were found.

“These remains (of the *Megaceros*) were found in the upper portion of a thick bed of laminated clay, which, at this part of the valley, is mixed up with so much vegetable matter that it presents quite a peaty character. They lay on the same horizon, and near to the same spot where the skull of the *Bos primigenius* was found some time ago. The depth at which they occurred below the old surface of the valley is nearly 20 feet, but recent cuttings seem to show that

part of the overlying bed is the result of slips of earth and boulder clay from the hillside, over deposits formed in the bottom of an old lake. This appears to be the second instance in which the 'Irish deer' has been found in Scotland. Mr Young also stated that this seems to be the first recorded instance in which the remains of the horse have been found associated with the large extinct mammals that roamed in the valleys of Scotland in Post-Pliocene times."

In the Geological Magazine, London, for September, 1868, vol. v. p. 393, Mr James Geikie, of H.M. Geological Survey, described the discovery of the *Bos primigenius* (in the valley of the Cowden Burn, near the farmstead of Millthird), referred to in Mr Young's paper just quoted; he, however, considered it was obtained from interglacial beds in the true till or lower boulder clay.

Mr Geikie describes the specimen, which was imperfect, but enough remained, including one of the horn cores, to leave no doubt of its being the *Bos primigenius*. The fossil was imbedded some feet deep in a soft clay or mud, interlaminated with lines and beds of sand, and occasional layers of fine gravel. In some of the layers of clay he detected a little vegetable matter, but in such a state of decay that he could not be certain as to the plant.<sup>1</sup> These beds occupy a basin-shaped depression, and rest partly on boulder clay, and partly on rock. The strata are overlaid by the boulder clay in such a way, Mr Geikie says, as to leave no doubt on the mind that they form an intercalated series. Mr Geikie was particularly careful to ascertain whether a slip from the hill-side might not explain their interstratified position; but, after a minute examination, he was satisfied that no such landslide had taken place, but that, as he had shown (in the sketch sections which illustrate his paper), the laminated clay and sand are distinctly interbedded with the till. I must, however, refer for more minute information on the subject to Mr Geikie's papers. Mr Geikie's views were controverted by another geologist, Mr Robert Craig, at page 486 of the same vol. v. of the Geological Magazine; he appears to hold the same views as those since advocated by Mr Young, and Mr Geikie replies to him at page 535, referring to other geologists of note who take his own views as correct.

<sup>1</sup> See "On the Organic Remains found in Clay near Crofthead, Renfrewshire." By James A. Mahony, Esq. (*Geological Magazine*, p. 390, vol. vi. No. 9, Sept. 1869. London.) Mr. M. considers the beds date *at least* from the close of the Glacial period.



Since this date, however, Mr Young, in his paper above referred to, describes a great slip of the boulder clay from the hillside during the railway operations; which slip slid down over and under the laminated clay beds, displacing them by the movement to a considerable extent. From this he contends that the other intercalated tongue-like patches of boulder clay, and the contortions observed in parts of the section in the lower laminated beds—the upper being horizontal and undisturbed—are clearly explained by former landslips, and that the whole of the physical or geological evidence does not warrant us in assuming that these stratified deposits are older than those found in similar dried-up lakes over the country, in which the same species of mammalia are entombed.

Mr Young informs me that Mr David Robertson, F.G.S., Glasgow, carefully examined the *Ostracoda* of the Crofthead beds, and finds that they are all of species common to the recent freshwater lake deposits of the west of Scotland. Mr Robertson considered that, had they been of interglacial age, he would have expected that they would have shown some evidence of such antiquity, either in their state of preservation, or of slight variations in some of the forms, as is seen amongst the marine organisms of the glacial beds of the Clyde; but such do not occur. Mr Young adds, neither does it appear that the plant-remains, diatoms, and other organisms found in the peaty layers differ from those observed in similar recent lake deposits still in process of formation in that same district, to the westwards.

In vols. vi. p. 73, and in vii. (Geological Magazine, January 1870), p. 53, Mr Geikie has other papers—the latter on the age of these stratified beds at Crofthead, with illustrative sections, to support his previous views, and he states that—"The underlying laminated clays, &c., are in places highly crumpled and contorted, and the foldings are so arranged as to show that the force which squeezed and puckered them must have acted in a direction *down* and not *across* the valley. Moreover, it is a fact that the similar intercalated beds of clay, sand, and silt, so commonly met with in the lower boulder-clay of Scotland, almost invariably show contortions in the same manner as here." "An examination of the slope of the ground above the spot where the mammalian remains were found, certainly does not favour the idea of a landslide having taken place." At the close of his paper, however, he tells us that "quite recently the

railway operations were interrupted by a landslip ;” but he considers this has not been caused “by the sliding forward of the boulder-clay upon the stratified deposits, but by the undermining, displacement, and actual abstraction of the soft foundations on which the boulder-clay rests.”

Into these disputed matters I cannot at present enter ; further discoveries are perhaps still needed to prove beyond all manner of doubt, —that the Irish elk, which lived in pre-glacial times, as shown by its remains found in the forest-bed of Cromer,<sup>1</sup> in Norfolk (the oldest of the Post-Pliocene sub-division, of the Post-Tertiary Formation of Sir C. Lyell), the great urus (*Bos primigenius*), with which it appears in this instance to have been associated, and also the horse,—at least the *Equus fossilis*, both of which also belong to the pre-glacial series of animals, as their remains have been found in the Cromer forest-bed,<sup>2</sup>—have all existed during our Scottish glacial epoch ; as well as belong to post-glacial times, and to a much later period, when beds of marl, and of peat, were forming at the bottom of the lakes and bogs, and, according to some naturalists, down even to the times of man.<sup>3</sup>

My object, however, is accomplished, when I simply show how very few undoubted instances of the occurrence of the Irish elk, *Megaceros Hibernicus*, have as yet, as far as I am aware, been recorded as discovered in Scotland.

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Dr John Alexander Smith presented to the Museum of the Society the skull of the elk (*Cervus alces*), found at Whitrig bog, Berwickshire, in 1870.

The Society then adjourned to St Andrew's Day, the commencement of next Session.

<sup>1</sup> See “Notes on some of the Fossil Mammals of Great Britain.” By Rev. W. S. Symonds, F.G.S., &c. (*Geological Magazine*. London, vol. v. p. 413. 1868.)

<sup>2</sup> See “On the Distribution of the British Post-Glacial Mammals.” By W. Boyd Dawkins, Esq., M.A., &c. (*Quarterly Journal Geological Society of London*, vol. xxv. p. 192. 1869.)

<sup>3</sup> See “On the Claims of the Gigantic Irish Deer to be considered as Contemporary with Man.” By Mr H. Denny. (*Proc. Geological and Polytechnic Society of West Riding of Yorkshire*. Leeds, 1855, vol. iii. p. 400.) Also “Catalogue of Irish Fossil Mammals.” (*Journal Geological Society, Dublin*, vol. x. pt. 2, p. 143. 1864.)

# PROCEEDINGS

OF THE

## SOCIETY OF ANTIQUARIES OF SCOTLAND.

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NINETY-SECOND SESSION, 1871-72.

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ANNIVERSARY MEETING, 30th November 1871.

JOHN ALEXANDER SMITH, M.D., Vice-President, in the  
Chair.

The Office-bearers of the Society for the ensuing Session were  
elected as follows :—

*Patron.*

HER MAJESTY THE QUEEN.

*President.*

THE DUKE OF BUCCLEUCH AND QUEENSBERRY, K.G.

*Vice-Presidents.*

FRANCIS ABBOTT, Esq.

JOHN ALEXANDER SMITH, M.D.

THOMAS B. JOHNSTON, Esq.

*Councillors.*

Right Hon. EARL of DALHOUSIE, K.T., &c.	} <i>Representing the Board of Trustees.</i>
JAMES T. GIBSON CRAIG, Esq.	

PROFESSOR WILLIAM TURNER, B.M.

HON. LORD NEAVES.

LORD ROSEHILL.

BARRON GRAHAM, Esq.  
Captain T. P. WHITE, R.E.  
D. MILNE HOME, Esq., LL.D.  
ROBERT HUTCHISON, Esq.

*Secretaries.*

JOHN STUART, Esq., LL.D., General Register House.  
ARTHUR MITCHELL, M.D., Commissioner in Lunacy.  
DAVID LAING, Esq., *for Foreign Correspondence.*

*Treasurer.*

DAVID DOUGLAS, Esq., 88 Princes Street.

*Curators of the Museum.*

JAMES DRUMMOND, Esq., R.S.A.  
ROBERT CARFRAE, Esq.

*Curator of Coins.*

GEORGE SIM, Esq.

*Librarian.*

JOHN TAYLOR BROWN, Esq.

*Auditors.*

JOHN MACMILLAN, Esq., A.M.  
JAMES D. MARWICK, Esq.

*Publishers.*

Messrs EDMONSTON and DOUGLAS.

JOSEPH ANDERSON, *Keeper of the Museum.*  
GEORGE HASTIE, *Assistant.*



Mr LAING stated that nine of the Fellows of the Society had died during the past year, viz. :—

JAMES AULD, LL.D., Madras College, St Andrews,	Elected.
ALEXANDER H. CHALMERS, Esq., W.S., Aberdeen,	1866.
ROBERT CHAMBERS, LL.D., St Andrews,	1844.
THOMAS MACKNIGHT CRAUFURD of Cartsburn, Esq.,	1861.
The EARL of DUNRAVEN AND MONTEARLE,	1862.
Sir ARCHIBALD EDMONSTONE of Duntreath, Bart.,	1863.
Rev. GEORGE JOHNSTONE, D.D., Edinburgh,	1848.
Major WILLIAM DRUMMOND MERCER of Huntingtower,	1862.
ANDREW SMALL, Esq., Banker,	1853.

During the same period thirty-four Gentlemen have been admitted Fellows; and there are at present on the roll 373 Fellows of the Society.

A ballot was then taken, and the following Gentlemen were admitted Fellows :—

Right. Hon. the EARL of ROSEBERY.  
 WILLIAM GORDON, M.D., Stafford Street, Edinburgh.  
 F. A. MACKAY, Esq., Royal Bank, Edinburgh.  
 Rev. JAMES B. MACKENZIE, Minister of Colonsay and Oronsay.  
 DAVID MARSHALL, Esq., Kinross.  
 J. J. MILLIDGE, Esq., Claremont Street, Edinburgh.  
 NIEL STEEL, Esq., Constitution Terrace, Dundee.  
 JOHN. C. SHAIRP, Esq., LL.D., Principal of the United College, St. Andrews.  
 CHARLES WYVILLE THOMSON, LL.D., Regius Professor of Natural History, University of Edinburgh.

The SECRETARY then read the Annual Report, as follows:—

“ ANNUAL REPORT of the Society of Antiquaries of Scotland to the Honourable the Board of Trustees for Manufactures for Scotland for the year ending 30th September 1870.

“ During the past year the Museum has been open continuously, except during the month of November, when it was closed as usual for cleaning and re-arrangement.

“ The number of visitors for the year is shown in the following table, distinguishing between day visitors and visitors on the Saturday evenings, for each month :—

1870-71.	Day Visitors.	Sat. Evenings.	Total.
October . . . . .	5,089	1,212	6,301
December . . . . .	5,243	810	6,053
January . . . . .	18,755	930	19,685
February . . . . .	3,907	964	4,871
March . . . . .	4,388	689	5,077
April . . . . .	3,688	799	4,487
May . . . . .	6,155	627	6,782
June . . . . .	7,559	774	8,333
July . . . . .	18,912	1,402	20,314
August . . . . .	21,412	1,335	22,747
September . . . . .	13,301	1,557	14,858
Total . . . . .	108,409	11,099	119,508
Previous Year . . . . .	97,363	13,479	110,842
Increase . . . . .	11,046	...	8,666
Decrease . . . . .	...	2,380	...

“ During the year 226 articles of antiquity have been presented to the Museum, and the donations to the Library amount to 54 volumes.

“ The number of articles above specified is exclusive of the following collections, also presented during the year :—

“ By Rev. J. M. JOASS, Corr. Mem. S.A. Scot., Golspie.

“ Collection of Relics from the Broch of Cill-Trolla, Sutherlandshire, obtained from the Rhind Excavation Committee.

“ By JOSIAH LIVINGSTONE, Esq., Chairman of the Chamber of Commerce.

“ Collection of Pottery and other articles found in excavating on the site of the New Scottish Wharf, Wapping.

“ By the COMMITTEE of MANAGEMENT, through CHARLES. E. DALRYMPLE, Esq., F.S.A. Scot.

“ Collection of Negatives from a selection of Historical Portraits shown at the Archæological Exhibition, held at Aberdeen in 1859, on the occasion of the meeting of the British Association there.

“ By Rev. JAS. MORRISON, Urquhart, Corr. Mem. S.A. Scot.

“ Collection of Flint Implements, Celts, Pottery, &c., from the parish of Urquhart, Elginshire.

“ By THOMAS EDMONSTON of Buness, Esq.

“ Collection of Stone Vessels, Implements, &c., obtained in excavations in the island of Shetland, Unst, for the Rhind Excavation Committee.

“ By the ANTHROPOLOGICAL SOCIETY of LONDON, through Mr JOSEPH ANDERSON, Keeper of the Museum.

“ Collection of Stone Implements, Pottery, &c., obtained from sepulchral cairns in Caithness, and from the Brochs of Bowermadden and Old Stirkoke.

“ By MESSRS JOSEPH ANDERSON and ROBERT INNES SHEARER, Thrumster.

“ Collection of Stone, Bronze, and other remains from the Brochs of Yarhouse and Brounaben in Caithness, obtained for the Rhind Excavation Committee.

“ A considerable number of interesting objects of antiquity have also been placed in the Museum for exhibition on loan during the year.

“ A new edition of the Catalogue of the Museum, prepared by Mr Anderson, the Keeper of the Museum, is in the press, and will shortly be ready.”

JOHN STUART, *Secretary.*

MONDAY, 11th December 1871.

THOMAS B. JOHNSTON, Esq., Vice-President, in the Chair.

A ballot having been taken, the following Gentlemen were admitted Fellows:—

JOHN T. BEER, Esq., Fulneck, Leeds.

Captain CHARLES HUNTER, Royal Aberdeenshire Highlanders.

J. J. MUIRHEAD, Esq., Mayfield Terrace.

JAMES M'ADAM HYSLOP, M.D., Surgeon-Major, Palmerston Place.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors:—

- (1.) By Rev. GEORGE WILSON, Minister of the Free Church, Glenluce.



Celt of Greenstone, found near Glenluce,  $8\frac{1}{4}$  inches in length.

Celt of Greenstone, of flat triangular form, found in Glenjorrie Burn,



Glenluce, Wigtownshire. It measures  $8\frac{1}{4}$  inches in length by  $3\frac{1}{4}$  across the cutting face, and tapers regularly to the small end; it is well polished, and remarkable for its thinness, being only  $\frac{3}{4}$  of an inch thick in its thickest part. The Celt is well shown in the annexed woodcut.

Flint Spear-head, with barbs and stem, 3 inches long (wants the point) and  $1\frac{1}{2}$  inch wide at the broad end, found in Machermore Loch, Glenluce.

Ribbed Bead of Earthenware, with greenish glaze,  $1\frac{1}{4}$  inch diameter, and pierced by a hole nearly  $\frac{1}{4}$  of an inch diameter. It was kept by an old woman in the neighbourhood of Glenluce as an "Ethir-bore stane."

Whorl of Clay Slate,  $\frac{3}{4}$  of an inch in diameter, semi-globular, and ornamented with concentric circles, found in Gleniron, Glenluce.

Small Oval Wooden Cup, of one piece, 4 inches long and  $2\frac{1}{2}$  inches deep, with handle at one end, found under a large wooden dish in Dalvaird Moss, Glenluce.

(2.) By Mr JOHN FORSYTH, through the Rev. Mr WILSON, Glenluce.

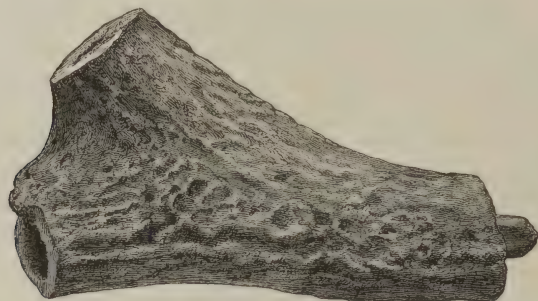
A portion of the point end of a Bronze Spear-head, found at Buchan Glentroll, Kirkcudbrightshire.

(3.) By GEORGE PETRIE, Esq., Kirkwall, Corr. Mem. S.A. Scot.

Collections from the Broch of Lingrow, Scapa, Orkney, obtained for the Rhind Excavation Committee, consisting of forty-six fragments of pottery, most of them showing part of the rim, and many having portions of the ornamentation with which the vessels appear to have been covered. It consists, in some instances, of raised bands running horizontally round the vessel, and indented by short markings made with a pointed instrument in the soft clay; in other instances, the markings form a pattern between the raised bands, and there are other pieces without raised bands, marked simply with combinations of straight lines meeting each other at different angles, one of these forms a pattern having some resemblance to a fern leaf. This pottery is interesting from its being the first found in the Brochs having this peculiar style of ornament. The only other pattern hitherto found on the pottery of the Brochs has been one resembling the "thumb-nail" ornamentation of the pottery of the long barrows

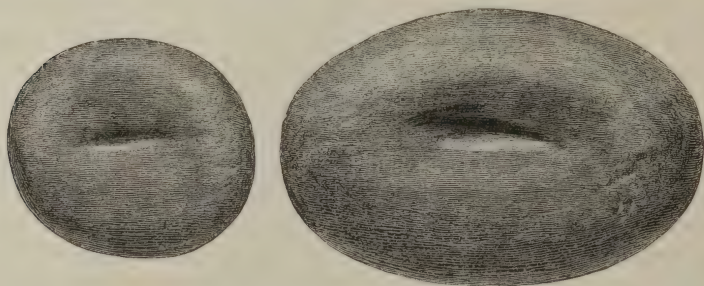
of England and the lake dwellings of Switzerland. Some of the specimens of the pottery of the Irish crannogs show a certain resemblance in the style of their ornamentation to this pottery from Lingrow.

Implement of Deer's Horn,  $4\frac{1}{4}$  inches in length, sawn at both ends and having a square portion of hard bone inserted in the centre of the one end. (See figure.)



Implement of Deer's Horn, found in the Broch of Lingrow.

Flattish Pebble of Quartz, 2 inches diameter and  $\frac{1}{2}$  inch in thickness, having an oblique longitudinal depression, about 1 inch in length and  $\frac{1}{8}$



1. Quartz Pebble, with depression, from Lingrow (2 inches diameter).
2. Similar Quartz Pebble from Kintradwell ( $3\frac{1}{4}$  inches in length).

inch in depth, worn in the middle of each of its flat sides. A similar stone is among the relics from the Broch of Kintradwell, now in the

Museum. Stones of similar character are common in Norway and Denmark. These two specimens are the only examples known to have occurred in Scotland.

Portion of a Clay Mould for casting bronze pins, with open circular heads,  $3\frac{1}{2}$  inches in length. A pin in every way similar to those that



Clay Mould, found in the Broch of Lingrow.



Bronze Pin, found in the Broch of Bowermadden, Caithness.

have been cast in this mould was obtained in 1866 from the Broch of Bowermadden, Caithness, by Mr Anderson, and is now in the Museum. The mould and pin are both shown in the accompanying woodcuts.

Long-handled Comb, 4 inches in length, made of the bone of a whale. The teeth of the comb seem to have been eight in number, and are all broken off.

Whorl of Steatite,  $1\frac{1}{4}$  inch diameter, broken.

Three Whorls of Sandstone,  $1\frac{1}{4}$  to  $1\frac{3}{4}$  inch diameter.

Implement of Deer's Horn, 4 inches in length, sawn across at both ends, and hollowed as if for use as a handle.

Bone Awl or Implement, 7 inches in length, made from the leg-bone of a large animal. Similarly formed implements have been found at Keiss, Caithness, and in the lake dwellings of Switzerland.

Three portions of the point ends of Antlers of the Red-deer, cut and sawn.

Piece of Burned Antler, sawn across one end.

Coprolites of the Dog, &c.

Charred Barley.

Fragments of Bronze, being apparently parts of rings or pins.

(4.) By GEORGE PETRIE, Esq., Kirkwall, Corr. Mem. S.A. Scot.

Tooth of a Sperm Whale, found in the Howe of Hoxa, South Ronaldsay, Orkney.

The following notices of this tooth and of the structure in which it was found are taken from a paper subsequently read to the Royal Society, by PROFESSOR TURNER, entitled "Additional Notes on the Occurrence of the Sperm Whale in the Scottish Seas":—

"In August 1871, Mr George Petrie of Kirkwall, presented to the Scottish Society of Antiquaries a tooth recently obtained from a 'brough' near the Howe of Hoxa, in the Isle of South Ronaldsay, on a promontory opposite the Bay of Scapa. This tooth had obviously been buried in the earth for a lengthened period, and in all probability was co-eval with the early occupation of the 'brough,' and may have belonged to one of its early Norse, or even still more ancient inhabitants. This tooth has been carefully examined both by Professor Duns, Dr John Alexander Smith, and myself, and we all agree in regarding it as the tooth of a sperm whale. A part of the alveolar end of the tooth, more especially on one side, has been broken away, so that the



conical-shaped pulp-cavity is fully exposed. The free end of the crown is smooth and rounded, such as one sees in specimens of well-worn teeth of this animal. The length of the tooth is  $5\frac{3}{4}$  inches, but, owing to a part being broken off, this does not give its full length; the greatest girth is  $6\frac{3}{4}$  inches.

“Mr Petrie has most courteously sent me an account of the locality in which he discovered the tooth. He says:—‘I was glad to find that the tooth was of some interest. I was led to its discovery by a request of my friend, Mr James Fergusson, the author of the “Handbook of Architecture,” to make some excavations in the vicinity of the Howe of Hoxa, with the view of discovering, if possible, the tomb of the celebrated Orkneyan Jarl, Thorfinnr, who was, according to the “Orkneyinga Saga,” buried at Haugseið, now known as the Howe of Hoxa. The Howe is apparently a long-shaped natural mound of considerable height, on which artificial mounds were probably made, as traces of them can still be seen, as well as of a massive stone wall encircling a great portion of the top of the mound. On the north end of the mound are the ruins of a large circular structure, which, on being excavated between twenty and thirty years ago, was found to be the remains of a brough or round tower. On proceeding to the spot last summer, and carefully examining the mound, I found that it would involve much time, labour, and expense to make a satisfactory examination. I determined, therefore, to excavate a smaller mound, evidently wholly artificial, at a short distance from the Howe of Hoxa, but connected at one time with it, as traces of an avenue of stones leading from the one to the other were still to be seen. I expected to find a chambered tomb, but to my surprise a structure resembling the ordinary brough, but far less symmetrical than such buildings usually are, was revealed. I am inclined to think that it was sepulchral in character, although of a type unique, so far as my experience goes. The passages or galleries were still roofed in many parts by flag-stones laid across from wall to wall. The excavations did not produce many relics, but amongst these were bits of dark pottery and several vertebrae of whale much scorched by fire. One of the vertebrae, about 1 foot in diameter at the broadest part, and  $9\frac{1}{2}$  inches in height, had been fashioned into a rude vessel by scooping out the central or more porous part of the bone, as is often the case. It was found about 2 feet beneath

the surface of the mound at A, on what appeared to be the floor of the interior of the structure, and it and the other vertebræ were buried beneath the ruins, which seemed to have fallen upon them. The tooth was found at B, and not far off a piece of freestone, convex on one side and slightly concave on the other. The concave side was tolerably smooth, apparently due to friction of a freestone rubber passing frequently over its surface. Similar stones were found in the brough of Hoxa, when it was cleared out some years ago. They much resemble the slightly hollowed stones found at New Grange, in Ireland. I do not remember any case of a brough which has been explored in Orkney in which bones of the whale have not been found.

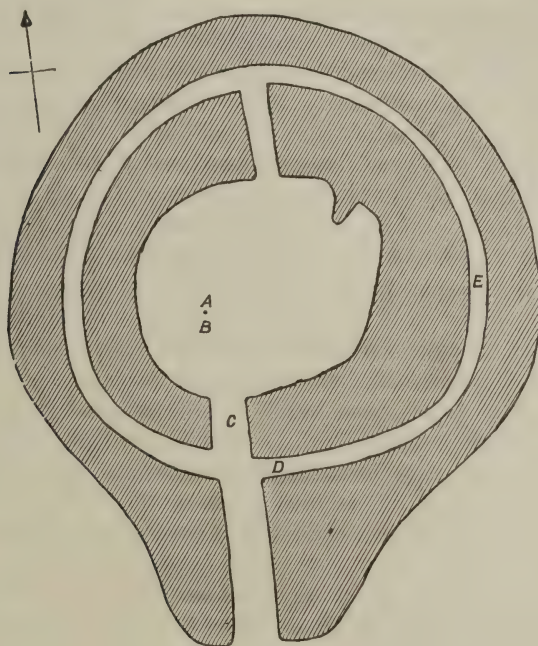
“I hesitate very much to attempt even to assign a date to the structure in which the tooth was found. It may belong to the period of the Celtic or Pictish population by whom the islands were occupied prior to their invasion by the Scandinavians, but I do not think, from the general appearance of the ruins and the character of the remains found in them, that the tooth belonged to a whale captured or driven ashore later than the Scandinavian-Pagan period in Orkney, or say the ninth or tenth century.’

“As bearing on the early history of the sperm whale in the British islands, I may next refer to a passage in a memoir by the eminent Norwegian archæologist, Professor P. A. Munch, to which my attention has been directed by Mr Joseph Anderson, the curator of the Antiquarian Museum. The memoir is entitled ‘Geographical Elucidations of the Scottish and Irish Local Names occurring in the Sagas,’<sup>1</sup> and on pp. 128, 129, Professor Munch, in his account of the Shetland Isles, says:—‘The island of Yell is nearly divided into two halves by the deep fiords which penetrate on each side, Whalefirth (Hvalfjörðr) on the west, and Reafirth (Reyðarfjörðr) on the east. In a deed dated May 19, 1307, which speaks of the pledging of the estate Kollavâgr, now Cullavoe, one of the witnesses is a Högni i Reyðarfirði. This Reyðarfjörðr is clearly the above Reafirth, early contracted, or rather corrupted, even by Norse speakers, to Rafjörd.’ Further, Professor Munch states, it is very suitable that the two opposite fiords should be called, the one Hvalfjörðr, and the other Reyðarfjörðr, for Reyðr (now called Röðr or Rör, in Norway),

<sup>1</sup> Mémoires de la Soc. Royale des Antiquaires du Nord, 1850–1860, Copenhagen.

is also a kind of whale, the *Physeter macrocephalus*, black-headed sperm-ceti whale.

"If we are to accept this interpretation by Professor Munch, that the



Ground Plan of structure near seashore at Hoxay, about 110 yards westward of Howe of Hoxay, on Brough of Hoxay. Ruins excavated and planned by George Petrie, Esq., Kirkwall, in summer, 1871. Scale,  $\frac{1}{16}$ th inch to 1 foot. A, the place where the broken vessel made out of the vertebra of a whale was found. B, the situation of the tooth of the sperm whale. C, entrance doorway, which was roofed over with stones. D, passage, also roofed over. E, passage where stone roof was destroyed.

old Norse term Reyðar was equivalent to our sperm whale, then we should have to assume that this cetacean was so well known to the ancient Norsemen that they had coined a word to designate it. And it is indeed

not improbable that, considering their roving habits, they may have sailed in the seas which it most usually frequents, and perhaps have chased it for the sake of its valuable oil.

"But from the association of this name with a particular firth in the Shetland group of islands, it would, granting the accuracy of Munch's interpretation, seem as if, in the early years of the Norse settlement, the sperm whale had not unfrequently entered this firth, and perhaps been captured there—a circumstance which would show that this animal was then a much more frequent visitor of the Scottish seas than we know it to be at the present day, or indeed to have been for some centuries past.

"But I think it very questionable if the interpretation given by Professor Munch of the old word *Reyðar* can be regarded as zoologically correct. Torfæus, the historian of Greenland, in his account of the cetacea which frequent the Greenland and Iceland seas,<sup>1</sup> uses the term *Reidr* three times in his description of these whales. One he terms *Hrafnreidr*, white in colour, of a length of fourteen or sixteen cubits, '*branchiis etiam præditus,*' and tastes well. A second, called *Hafreidr*, a whale of sixty cubits, or a little more, which carries a small horn, and is most pleasant to eat. The third is named *Reidr*, or most usually *Steipireidr*, which, he says, surpasses all others in sweetness, is gentle, and not to be feared by ships. The largest which has been caught by the Northmen equals 130 cubits, is very fat, '*branchiis gaudet,*' but wants teeth. This description by Torfæus is much wanting in precision, and the statement that the *Hrafnreidr* and *Reidr* possess branchiæ would lead one to say, if this term were understood by him in the sense in which it is now employed, that these animals were not whales, but fishes. It is probable, however, that the so-called branchiæ in *Hrafnreidr* and *Steipireidr* may be the plates of whalebone which depend from the roof of the mouth of the baleen whales, and which have a laminar arrangement not unlike the gills of a fish, and might readily be mistaken for such by an inexperienced observer. The absence of teeth, however, conclusively shows that these could not be sperm whales.

"Otho Fabricius, in his '*Fauna Groenlandica,*'<sup>2</sup> identifies the *Hrafnreidr* of Torfæus with the fin whale named by Linnæus *Balæna boops*;

<sup>1</sup> *Gronlandia Antiqua*, pp. 90, 96. Havniæ, 1706.

<sup>2</sup> *Hafniæ*, 1780, p. 36, *et seq.*



and the Reidr or Steipireidr with the *Balæna musculus* of the same naturalist. By Otho F. Müller,<sup>1</sup> the term Reider or Reydur is applied to two species of baleen whales; Mohr also, in his Natural History of Iceland,<sup>2</sup> adopts the classification of Fabricius; and Erik Jonsson, in his Dictionary of Old Norse Terms,<sup>3</sup> accepts the definition of the above naturalists. Further, both the lexicographer and the naturalists agree in giving as the Norse equivalent for our term sperm whale, not Reyðar, but Búrhvalr. Munch himself, also, by putting the Norwegian term Röhr or Rör as equivalent to the older word Reyðar, supplies me with an additional argument against the latter word being regarded as signifying sperm whale, for Rör or Rörhval is merely our term Rorqual, *i.e.*, a whale with folds and sulci extending longitudinally along the belly, such as one sees in the Balænopteriðæ or Finner whales, but which do not exist in the sperm whale.

"Hence we cannot regard Reafirth in Yell as having received its name from having once been a place of resort for the sperm whale, or as affording any evidence that our seas were at one time more largely frequented by these huge cataceans than at the present day.

"But though this name loses its interest in connection with the natural history of the sperm whale, it acquires importance in reference to the natural history of the Rorquals. Of this group of whales, two, *viz*, the common Finner, and the species of Fin whale, of which we had recently so fine a specimen stranded at Longniddry, attain a length of upwards of 60 feet, and are not uncommon in our seas. By modern zoologists, the common Finner is usually called *Balænoptera musculus* (*Physalus antiquorum*), and may be identical with the Hrafnreidr of Torfæus. The other, the *Balænoptera Sibbaldi*, has been identified by Professor Reinhardt and myself<sup>4</sup> as identical with the Rorqual, to which the Icelanders even at the present day apply the name of Steypireythr. In all probability the firth on the east side of Yell, now known as Reafirth, was frequented by these Rorquals, and was named by the ancient Norse settlers, Reyðarfjörðr, from this circumstance, whilst the deep inlet of the

<sup>1</sup> Zoologicæ Danicæ Prodomus. Hafnæi, 1776.

<sup>2</sup> Forsøg til en Islandsk Naturhistorie. Copenhagen, 1786.

<sup>3</sup> Oldnordisk Ordbog. Copenhagen, 1863.

<sup>4</sup> See my Memoir in Trans. of this Society, p. 247, 1870

sea on the west side of the island, now known as Whale-firth, may have obtained its Norse name of Hvalfjördr from having been the resort of the 'caaing' whale, which in large herds still frequents the Orkney and Shetland seas, and is killed in great numbers by the islanders."

- (5.) By WILLIAM TRAILL of Woodwick, Esq., M.D., Corr. Mem. S.A. Scot.

Slab of Clay Slate, 2 feet 4 inches in length and  $14\frac{1}{2}$  inches in greatest breadth, having incised on one of its flat surfaces a cross, and on its right side a line of inscription in Ogham characters. The cross is of similar form to those on the sculptured stones at Ulbster in Caithness, and Monymusk in Aberdeenshire. Some parts of the surface have scaled off, and the cross is thus incomplete towards the bottom of the shaft, where there are remains of a figure which may have been something resembling a fish. The Ogham inscription seems to be complete except in one part near the middle, where there is a slight break in the stone. The style of the inscription is peculiar, the ends of the letters being "tied" by cross strokes in a way not usually found in similar inscriptions. The slab was found in the Broch of Burrian, North Ronaldsay, Orkney. (See subsequent communication by Dr Traill).

- (6.) By FRANCIS FARQUARSON of Finzean, Esq., F.S.A. Scot., through JAMES DRUMMOND, Esq., R.S.A., F.S.A. Scot.

Urn, found in a cairn on the hill of Migvie, Tarland, Aberdeenshire. It is formed of yellow clay, somewhat bowl-shaped,  $5\frac{1}{2}$  inches in height and  $6\frac{1}{2}$  inches across the mouth, ornamented with two parallel raised bands, crossed by vertical scorings, and alternating with rows of impressions as of the teeth of a comb. It was found in a cist formed of four slabs and covered by a large rough slab of granite. The cist measured  $2\frac{1}{2}$  feet in length by  $1\frac{1}{2}$  foot in depth, and the same in width. The urn lay partly on its side in the south-west corner of the cist, and contained a few calcined bones, among which was a human toe-nail.

Another Cist, 3 feet 3 inches in length internally, and  $1\frac{1}{2}$  foot wide, and the same in depth, was found lying parallel to this one at a short distance from it; and a third cist of smaller dimensions, being only about a foot square, was within a few feet of them. The cairn was of an irregularly oval form, but had been greatly destroyed by the partial removal of the stones.

(7.) By JAMES CASSIE, Esq., R.S.A.

Padlock from the Old Jail of Aberdeen. The lock plate is 9 inches square, strongly riveted, and the staple, which is 5 inches wide, is nearly an inch in diameter.

(8.) By GEORGE SETON, Esq., F.S.A. Scot., the Author.

The Convent of St Catherine of Sienna. (Privately Printed). 4to. 1871.

(9.) By General PATRICK YULE, F.S.A. Scot.

The Military History of Eugene and Marlborough. By Claud Du Bose. 2 vols. folio. Lond. 1836.

(10.) By the Hon. WILLIAM OWEN STANLEY, M.P., F.S.A., the Author.

Cyttiaur Gwyddelod: Memoirs of Remains of Ancient Dwellings in Holyhead Island, explored in 1862 and 1868; with Notices of Relics found in recent Excavations there and in various parts of Anglesea. 8vo. Lond. 1871.

(11.) By the Right Hon. Lord ROMILLY, MASTER OF THE ROLLS.

Calendar of the Carew Manuscripts, preserved in the Archiepiscopal Library at Lambeth. The Book of Howth, &c. 8vo. 1871.

Calendar of State Papers and Manuscripts existing in the Archives and Collections of Venice, 1527-1533. 8vo. 1871.

Calendar of State Papers. Domestic Series of the reign of Charles I., 1638, 1639. 8vo. 1871.

Calendar of State Papers. Domestic Series of the reign of Queen Elizabeth. Addenda, 1566-79. 8vo. 1871.

Chronica Rogeri de Hoveden. Vol. IV. 8vo. 1871.

Chronica Johannis Ammundesham. Vol. II. 8vo. 1871.

The following Communications were read :—

## I.

NOTICES OF THREE CHURCHES IN NORTH UIST, BENBECULA, AND GRIMSAY, SAID TO HAVE BEEN BUILT IN THE FOURTEENTH CENTURY. (WITH PLANS AND DRAWINGS.) BY CAPTAIN F. W. L. THOMAS, R.N., F.S.A. SCOT.

(This Paper is reserved for the *Archæologia Scotica*, Vol. V.)

## II.

NOTES ON THE CRANNOGS AND LAKE DWELLINGS OF WIGTOWNSHIRE. BY THE REV. GEORGE WILSON, MINISTER OF THE FREE CHURCH AT GLENLUCE.

Machermore is one of the many glacial lakes in Wigtownshire. It lies rather less than 3 miles south-east from Glenluce, to the east of the Portwilliam Road, about  $1\frac{1}{4}$  mile from the sea-shore, at an elevation of nearly 200 feet above the sea.

On the Ordnance Survey map it is called Whitefield Loch. But this is a modern name. In the title-deeds of the lands of Machermore, it is called Machermore Loch.<sup>1</sup> In Timothy Pont's map of "The Sherrifdome of Wigtoun w<sup>th</sup> the Regalitie of Glen-Luze," published in Blaeu's Atlas in 1654, it is called "Macherymoir Loch." This name seems descriptive of its position near the edge of the "*great plain*" called *The Machars*, a brown table-land which stretches away east and south for many miles of peat, moss, and rough moor, gleaming with many lochs, and interrupted by ice-grooved rocks and rounded hills. One of these, called the Knock Fell (in Pont's map Knock Glas), a little more than a mile east of the loch, is the highest hill in Old Luce parish, being 573 feet above the sea.<sup>2</sup> It is surrounded near the summit by the traces of an ancient wall of fortification.

The loch is about 1000 yards long from east to west, and about 450 yards wide. Some low ground on the south and west is liable to floods,

<sup>1</sup> I was told this by the late John Adair, Esq. of Balkail, who sold Machermore to the Earl of Stair. The Adairs of Gennoch owned the lands of Auchenmalg and Machermore.

<sup>2</sup> In the *one-inch* Ordnance Survey map it is wrongly entered as 513 feet.



and an ancient shore line shows that the water once covered a much larger space than at present. On the south and west there is much loch peat extending under the water. The rest of the beach and the bottom of the shallower parts consist of rough angular stones of the glacial drift. In the deeper parts, the bottom is soft when probed with an oar. In a few places the depth is fully 20 feet. There are large pike and loch trout. In some parts of the loch there are indications of strong springs: but the chief feeder is Craigenveoch Burn, which drains Loch Robbin, and enters at the north-east angle. The water is so dark with peat that, when more than a yard deep, the bottom is not well seen. On the north, it is bounded by the rocky moors of Barnsallzie and Craigenveoch; on the east, by the wooded Fell of Machermore, which rises rapidly to about 300 feet; on the west, by Fordhouse Fields; and on the south, by the road to Machermore and Culroy. On the strip of Whitefield Farm, between this road and the loch, trees have been planted, and I have to call attention to its little promontories and bays. The level of the loch varies according to the season, and is now affected by a sluice. The difference between the lowest and the flood level is about 5 feet.

About twenty years ago, in examining the mollusca of the loch, I was much puzzled by the appearance of some of the trees lying in the bay at Whitefield road; but the water was not low enough to let me reach them. In February 1867, Dr Stuart sent me a copy of his paper on our Scottish Crannogs, with a note stating that some of them are in this district; but I could do nothing without a boat.

Last summer, James Faed, Esq., who had purchased Craigenveoch, discovered that Dorman's Island is artificial, and had a short notice of the fact inserted in the "Galloway Gazette." On August 21, I had the pleasure of examining it along with him. On September 19, I took Dr Stuart to see it, and on that occasion, on landing him at the stone mound near Tree Island, we had the pleasure of observing many beams of wood lying near the margin. After he left us I suggested to Mr Faed that, as these beams were laid in a space sheltered from the westerly winds by the low water promontory at Tree Island, we should examine the similarly sheltered bay at Whitefield road. On doing so, we found similar beams there. On the 25th September, with the kind assistance of Mr Faed and Mr Miller, road surveyor, I laid down a base line along

this part of the shore ; and on the 13th October, assisted by D. R. Irvine, Esq., of the Geological Survey, I completed the base line and other measurements, and marked in the beams of wood on a chart. Unhappily, a strong ripple on the water made it impossible to lay down the position of any in the water except those near the margin, and ere I could return, the water was too high. On the 23d November, I found it up to the flood line. The accompanying map is constructed from these plans and measurements, and the 6-inch Ordnance Survey map. The outer



Plan of Machermore Loch. Scale, 6 inches to one mile.

dotted line is the 200 feet contour line ; the darker dotted line the ancient boundary of the loch ; the black line the boundary of the loch in the 6-inch Survey map, and the dotted line within it indicates the low-water mark of 1871. The figures are referred to in their order in the following notes, beginning at the west end.

No. 1 is an ancient causeway, on which an old line of road has crossed the hollow through which the present outlet is cut. It is formed of large rough stones, and is 220 feet long, with an average breadth of 6

feet, and height of 3 feet. I think this causeway may have been intended to act as a *weir* in regulating the level of the loch; for at present the flood-level just touches the bottom of it at one place, so that it is much higher than necessary for a mere roadway. In the beginning of the present century, the outfall was at Fordhouse, the dwelling there being reached by stepping-stones. The *top* of this causeway is just about the height of the ancient water-line.

No. 2 marks three oblong heaps of stones lying in line, slightly east of north, on the surface of soft peat. The stones are not angular, and some of them are pretty large. The heaps are from one to two feet high.

The first is 35 feet long by 15 feet of average breadth.

The second is 30 feet long by 12

The third is 34 feet long by 15

When the water is low, the present outlet is seen separating the first from the second.

There is a space of 36 feet between the second and third.

No. 3, 20 feet east from the middle heap of stones, marks rows of stakes in a bed of quaking peat, which, even at the close of the late dry season, afforded such a precarious footing that I could not apply the measuring line to those nearest the water's edge. Two parallel rows run in a north-easterly direction, and are crossed at right angles by two other rows. The parallelogram enclosed by their intersection is 11 feet by 6 feet, and within its north angle, three or four stakes form an arc of a circle. The stakes are from  $1\frac{1}{2}$  to 4 inches in diameter, and are too rotten to be easily pulled up. An ash stake, 3 inches thick, and about 8 feet long, had been driven 6 feet into the peat. It was neatly pointed with small axe marks. When held horizontally, it broke into three pieces by its own weight. Some of the stakes are willow. I have not examined the loch farther in at this point.

No. 4 is the root of a large oak tree, apparently imbedded in the peat, but really resting on the surface, with fine gravel and sand heaped up on the leeward, apparently by the waves. The stump, with its spreading roots, may have been placed there by the hand of man. The roots and gravel extend 18 feet by 12 feet.

No. 5 is an islet, 25 feet by 10 feet. It is almost cut away by a broad ditch, made twenty-two years ago, to fence the adjoining marshy ground.

The section shows it to be a natural mound of glacial drift. Where the mound thrown out of the ditch was peat a winter flood washed it away, and masses of it still lie on the southern beach.

Nos. 6, 8, and 9 mark three small islands, of which 8 and 9 are barely above water, and form, in dry seasons, a peninsula of coarse, angular gravel. At two places the peat comes in, and digging is necessary to show whether it extends under the shingle.

No. 6 has been planted, and I shall designate it "*Tree Island*." It seems to be a true *cranmog*.<sup>1</sup> It measures 70 feet by 50 feet, the greater axis lying north-east, and slopes rapidly, especially at the sides, and rises about 10 feet above the summer level of the loch. It is crowned by an old cairn, covered with green moss 6 or 8 inches deep. At the south-west part three beams of wood are laid in regular order, radiating from the cairn down the sloping beach. Farther out are two beams, apparently counterchecked flush; but the cross piece, being fir, is sorely decayed. To the north, at figure 7, there are many pieces of wood lying on the peat. Several are birch, with the bark on. In some places the wood has decayed, and its place is marked by the white clay under the peat, which is here quite thin. Many angular stones, some of them pretty large, lie scattered on the peat, and it is difficult to understand how they came there. I call this "*Tree Island wood-work*."

No. 10 is a circular mound of stones on the peat, 16 feet by 15 feet across, and above 3 feet high, with at least three short horizontal beams of wood laid on it, as marked on the map. The large stones atop seem to have been disturbed. I suppose this to be like the stone mounds found *under water* in the Swiss lakes, and called *Steinberg* or *Mont* by the Swiss archaeologists.

The space beside No. 10, extending about 320 feet along the shore, and reaching into the water at least to a distance of from 100 to 140 feet from the margin, contains many pieces of wood, some of them large. The nearest to the margin is about 15 feet into the water. In two instances, above the low-water line, a pair of cross beams are counter-

<sup>1</sup> I use this Irish term for convenience, without implying that it was ever used in Galloway. But I may mention that Pont's map calls the Black Loch of Challoglas, 4 miles off in Mochrum, Loch *Chranochy*. It contains several rocky islets, of which Pont marks three.



checked flush. In the water one was seen notched into the side of another at an acute angle. Near the stone mound lies a mass about 5 feet by 3 feet, formed of several pieces joined together.

Over this whole space the bottom is peat, resting on a white, adhesive, marly-looking clay, which appears through many irregular holes in the peat. I observed no shells in it. The peat is full of branches, or of holes out of which they have rotted away. Where the branches have been of birch, the shining bark often stands out like tubes, while the wood has wasted away.

The same remarks apply to the space marked 11, which I shall designate Whitefield Bay. This bottom of peat and clay is so soft that wading is impossible, and the oar can be thrust down 3 or 4 feet till it strikes a hard bottom.

At Whitefield Bay, for a space 240 feet long by from 70 to about 100 feet broad, the same kind of thing is found as at Nos. 7 and 10. Here also some of the beams are counterchecked flush. About 80 feet from the west end I noted three trees laid in a triangle, the longest being a fir 30 feet long. Has any example of such wood work been observed on the *shore* of any other lake in Great Britain or Ireland? It is something quite different from the crannogs, which are common in Galloway as elsewhere, and appears more like some of the works in the Swiss lakes. No *roots* have been observed among these trees and branches.

No. 12 is another *stone mound*, 18 or 20 feet in diameter. Mr Faed found it midway between the shore lines at 11 and 16, with a depth of 1 foot of water over the flat top, and of 8 feet all round it. I have not seen it yet.

No. 13 is apparently a small crannog; but I have not yet examined it, or seen any of the stakes or beams of wood which that distinctive name implies. It is 37 feet by 27 feet, the greater axis lying slightly south of east. It is about a yard high, and is covered with rank green grass. Except on the west, it is surrounded by peat. Between it and the road are the stumps of some oak trees, which are apparently *in situ*. If they grew there, the level of the water must have been lower than it is now. It may be called *little crannog*.

No. 14 marks two circular mounds of small gravel and sand, about 40 feet north of this crannog, raised about a foot above the surrounding peat

bottom, and conspicuous, when the water is low, by their thick covering of *Lobelia Dortmanna*. This pretty flower grows plentifully over the spaces above described. One of these mounds is 9 feet, the other 12 feet in diameter. I can think of no natural cause which could lay them down in so regular a form. Near them were three or four stakes of oak, neatly pointed.

At No. 15 are two patches, one of which is 10 feet in diameter, of coarse, irregular stones, laid on the soft peat, like a sort of floor, the other a large, quite irregular patch of similar stones, lying on soft peat. There are also scattered stones.

No. 16 is now planted with trees, and is only an island during floods. Its regular outline and position make it worthy of careful examination. It appears to be a natural promontory. Should wood work be found in it, the name might be "*Whitefield crannog*."

No. 17 is called Dorman's Island, from a man said to have been drowned near it. The large plan (on a scale of 1 inch to 60 inches) explains the details of its structure so far as yet made out. When the loch is full, it is about 60 feet by 50 feet, the greater axis lying east and west. When the water was lowest, in October, the greater axis was north and south, the part laid dry measuring 104 feet by 74 feet. It thus appears that it slopes much more gradually to the north. The water deepens as you recede from the southern shore, and the stones, of which the island seems to be formed, spread out under the water to a limit, marked pretty nearly by the darker line.

Beyond this, in the deeper water, a soft bottom is felt by sounding with an oar. The base probably measures 125 feet by 90 feet. The stones are rough and angular, many of them large. A paved ford, 56 feet long and about 3 feet wide, formed by a double row of large uneven stones laid close together, connects the crannog with the southern low water line. For about other 40 feet up the sloping shingle beach runs a road about 8 feet wide, roughly paved or beaten, and becoming gradually indistinct. At the east side of the ford, at low water line, is the top of an oak stake, which is exactly in line with two large oak stakes, standing erect on the crannog, 2 feet west of the north and south axis ;—one, about 8 feet high, is 34 feet from the south end ; and the other, about 6 feet high, is 39 feet from the north end. Boys in the neighbourhood have waded to the island

by this ford in dry weather. On the higher part the rough stones of the crannog are quite hidden by low willow bushes, rank grass, and *Lythrum Salicaria*. There is a sort of annular mound of stones surrounding the margin corresponding to the darker line on the plan, similarly hidden, but is laid down from memory. At the north end, there is a piece of rough pavement about 12 feet by 8 feet. An irregular piece of similar pavement is shown to the south-west. It is in this part of the crannog that most of the oak beams and stakes have been observed. But Mr Faed found three or four stakes at the south end, by turning over stones: one of these is marked on the plan. I have seen more than I have inserted in it. Those entered in it are drawn to scale, and pretty nearly in correct place.

Several of the beams show mortise holes neatly cut, some of them about 7 inches square. In some of the smaller ones pieces of the broken mortises still stand upright. Two or three short stakes were pulled up. They show at first a glairy covering of a golden yellow. When this is washed off the small axe marks are found quite fresh, and the grain of the wood is beautifully distinct. On exposure to the air, the buried part tends to split up into fibres. Only oak wood has been found here. At the other places we have noticed besides oak, the fir, ash, birch, alder, hazel, and willow. Among the angular stones there are a number of water-rolled stones and white quartz pebbles, which have been brought from the sea shore. Some of the granite stones are spherical, and cracked as by heat. Are they *boiling stones*?

Two or three sea-rolled stones were seen on the south shore also, and two or three flakes of flint.

No digging has yet been attempted at any of the places described. It seemed best, in the limited time at my disposal, to secure measurements and note appearances when the water was so low.

Mr Faed has made a road to his cottage along the north-east shore, about the ancient water line. Under about two feet of soil and subsoil he found burnt-looking branches. About the north-east shore he also has found a hard mass of iron-looking stone, with a broken pebble sticking in a hole through it. Some stakes have been seen among the stones on the north beach.

The flint javelin head, now presented by me to the Society's Museum,

was found, some years ago, by a boy, somewhere on the southern shore, among the stones.<sup>1</sup>

I do not think all the antiquities of this interesting loch have been observed yet. The keen eyes of Mr Faed's boys detected several of those above noticed; but some parts of the loch have not yet been closely examined.

On 24th November the loch was up to flood line. Tree island was about 5 feet above water. Dorman's island showed only the tops of the bushes. I examined carefully the part of Barnsallzie Moor near the north shore, and found ten or twelve cairns, so old that the stones are almost hidden by heather and peaty turf, and at least one foundation of an ancient circular dwelling. They are opposite Tree island, and are from 8 to 15 feet across and 2 to 3 feet high. In a marshy hollow is an annular mound of turf and stone, 3 feet high, 4 feet broad, outside diameter 36 feet, the entrance 25° south of east, with an oblong heap opposite the entrance, and three small cairns on the west and north-west. These may be works of the lake dwellers. There was an old cairn of no great size behind Mr Faed's cottage. Some have been dilapidated to build dykes. About quarter of a mile south-west of the Loch Robbin, in a field on Machermore, lying between the Loch of Machermore and the Knoch Fell, is a large mound, covered with smooth green turf, measuring from north to south 80 feet, and from east to west 46 feet. South slope, 18 feet; north slope, 25 feet; east slope, 12 feet; west slope, 10 feet. The height is about 12 feet. Some stones about the top were put there by the present tenant of Machermore. There are many cairns on Craigenveoch Fell, and some large ones to the south-east of the loch, but none of them so close to it as those just described.

Pont's map marks some of the Wigtownshire crannogs as *homesteads*. I think some of them have probably been used up to a comparatively modern period.

The following are a few hasty notes of other lochs with artificial works in them:—

<sup>1</sup> As this sheet passes through the press, I may note that in May 1872 I found on the shore of Whitefield Bay a quartz pebble, which had been used as a hammer-stone. It is now in the Museum.



## IN OLD LUCE PARISH.

1. *Barnsallzie Loch*, about 750 yards west from Machermore Loch. Above forty years ago this small loch was drained almost dry. On the west side a double row of parallel stakes was found mortised into horizontal beams at bottom and top. Two hammers of granite were found, but have been lost.

2. *Barlochhart Loch*,  $\frac{3}{4}$  of a mile south-east from Glenluce.—It is little more than a furlong across; but I found, among other traces of wood work on the shore an oak plank, 10 feet long, 9 inches broad, and 3 or 4 inches thick, the under side in its natural state, the upper dressed flat, with the axe marks quite distinct. A small island in it is artificial. There are large stones; but I saw no beams on it. Local tradition says there was a castle in the middle of this loch.

3. *Loch Robbin* (in Pont's map *Loch Ribbon*), which is less than  $\frac{3}{4}$  of a mile north-east of Machermore Loch, and drains into it. Mr Faed thinks it contains a crannog. I am doubtful. As it is near the Knock fort, it must be examined again.

4. *Barhapple Loch*, 4 miles east of Glenluce, close to the coach road.—James M'Culloch, one of my deacons, told me that, about the year 1842, in cutting peat, about 40 yards from the west side of this loch, he came on a circle of stakes (about a dozen), from the thickness of the arm to that of the leg, and about 5 feet long, the heads at least 2 feet below the surface. The stakes were of hazel, pointed by four axe cuts,  $3\frac{1}{2}$  to 4 inches broad, and some of them 5 inches long. The circle was cut away at two times, and was at least 5 feet in diameter; coarse branches were twisted among the stakes like wicker-work. No trace of clay.

## IN MOCHRUM PARISH.

5. *Loch Weyoch*, 7 miles south-east from Glenluce.—At the north-east part I noticed much wood, apparently in artificial order, but in a mixture of peat and water on which only a snipe could walk.

6. *Fell Loch*, above  $\frac{1}{2}$  a mile south of Weyoch.—Pont calls it *Dyrhynwen*. On the east shore, opposite *Fern* island, I found an oak in the peat, with an axe mark. My companion waded to the island and reported

the remains of a paved ford for 20 or 25 feet next the island. He saw rock *in situ*.

7. *Mochrum Loch*.—On *Long Island* the Survey map marks three rectangular ruins. The stone foundations are much hidden by rank vegetation. Two of them lie from north-west to south-east, the third has the end to the south-west. Possibly one or other may have been a chapel. We observed a very old circular heap of stones, not marked in the 6-inch Survey map.

#### IN KIRKOWAN PARISH.

8. *Loch Heron*.—Mr Faed examined its two islands, and found them artificial. A large stone, thrown on one of them, shook it at the opposite end. A crow bar, thrust down among the stones, got into a soft mass, and would have sunk, if not firmly held.

#### IN INCH PARISH.

9. *Loch Krindil*, commonly called the *Black Loch*.—I suppose Mr Dalrymple has reported on its crannog. The island in the *White Loch* has, I suppose, given its name to the parish. Pont's map marks it as a homestead.

### III.

NOTES RELATING TO DUNSINNANE HILL. BY THE REV. THOMAS BROWN, MINISTER OF COLLACE. COMMUNICATED BY ALEXANDER LAING, Esq., F.S.A. Scot., NEWBURGH.

Rev. Mr Brown, who was present when the excavations afterwards referred to were being made, has favoured me with the following Notes on Dunsinnane, which, relating to a site so world-renowned, are sufficiently interesting to be brought under the notice of the Society:—

“In the course of the summer of 1857, during the progress of some excavations which were being made at the time by T. M. Nairne, Esq. of Dunsinnane, a small spiral ring of exquisite workmanship was found. The form of the ring was that of a serpent; in size it was about as large as that usually worn on a woman's finger, and was made apparently of

bronze, which, however, from its age, had become so soft as to be easily scraped away with a penknife. The workmanship was most perfect, the eyes and scales on the back being carved in the most minute manner, and were of the most perfect regularity; so much so, that owing to their being so small it was only when they were looked at through a microscope that their beauty and exquisite workmanship became apparent.

"The ring was found in making a trench near the gateway of the fort, and when discovered was lying on the surface of the earth and rubbish which had been thrown up while the digging was going on, but before the workmen had left the spot for the day. Very careful search was made both at the time and afterwards, but nothing else interesting was found. The ring was given to Mr Nairne at the time, but after being in his possession for about a year was unfortunately lost.

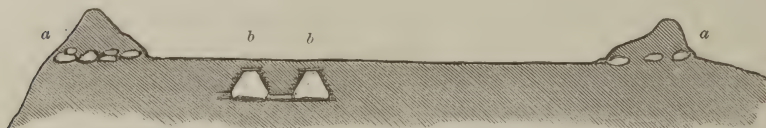
"In the course of the excavations there was, however, discovered a doorway, consisting of two rude unhewn slabs forming the posts, and a similar slab forming the lintel. From the doorway, which was low and narrow, and could not have been entered by a man in an upright position, there was a sloping passage leading to what seemed to be a house or burrow of considerable size, but underground; so that, while the house, if such it can be called, would have contained more than one, perhaps two or three persons, the doorway could only have admitted one at a time, and the passage could easily have been defended by any one armed with a spear.

"Another fact worth mentioning connected with the ruins on the top of the hill, whatever they may have been, is, that within the rampart no water has ever been found, nor has any trace of it been discovered, as indicated by the soil or the plants growing there. It is difficult to explain how the fort should have been so strongly fortified, as it evidently was, and yet have no water within its walls; as in these circumstances it would, in a very short time, have been reduced by being merely invested."

In addition to the facts communicated by Mr Brown, I may mention that the fort on Dunsinnane is vitrified. In the autumn of the year 1867, I dug from the foundations several pieces so thoroughly vitrified that several stones of red sandstone of considerable size were firmly bound together as if by *slag* from a glass-work. One of these pieces is in the Museum.

The underground or *Elrde* house, which on investigation would probably be found to be larger than indicated by Mr Brown, the vitrification of the walls of the fort, and the spiral ring, all tend to throw back the construction of the fort to a period of great antiquity.

[An account of the Hill Fort of Dunsinnane, with notices of the excavations made by Mr Nairne, and of three skulls found in the underground chambers (which were exhibited to the Society) by T. A. Wise, M.D., F.S.A., Scot., was read before the Society in April 1855, and published in the Proceedings, vol. ii. p. 93, where the annexed section of the structure which occupies the top of Dunsinnane Hill is given.



Section of the Hill Fort of Dunsinnane.

*a a*, Earthen rampart, packed with boulders. *b b*, Underground chambers.

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MONDAY, 8th January 1872.

THOMAS B. JOHNSTON, Esq., Vice-President, in the Chair.

A ballot having been taken, the following Gentlemen were admitted Fellows :—

JAMES CASSIE, Esq., A.R.S.A.

THOMAS DICKSON, Esq., 6 Grosvenor Crescent.

PATRICK DUDGEON of CARGEN, Esq.

JOHN HENDERSON, Esq. of West Bank, Partick, Glasgow.

WILLIAM FERGUSON, of Kimmundy, Esq., F.L.S., F.G.S.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors :—



- (1.) By the Right Hon. the EARL OF STAIR, through CHARLES ELPHINSTONE DALRYMPLE, Esq., F.S.A. Scot.

Double Margined Comb of Bone, imperfect,  $2\frac{3}{4}$  inches across, formed of separate pieces, enclosed between two transverse slips of bone, fastened with three iron rivets, and ornamented with a central row of dots and circles, and two similar rows at the side of the cross piece, having a running scroll pattern connecting them. A zig-zag ornament forms a band across the end.

A flat Loop of Bronze,  $1\frac{1}{4}$  inch in length.

Part of the rim of a large vessel of cast bronze, 3 inches in length.

Portion of an Armlet, of greenish glass, with a blue and white twisted cable ornament running round it.

Copper Coin, much defaced.

Copper Bodle of Charles II.

Collection of Bones of the ox, pig, sheep, &c., found with the foregoing articles during the excavation of an artificial mound on an island in Loch Inch Crindil, Galloway. (See subsequent Communication by C. E. Dalrymple, Esq.)

- (2.) By GEORGE SIM, Esq., F.S.A. Scot., *Curator of Coins*.

Armlet, probably Roman,  $2\frac{1}{2}$  inches in diameter, formed of a bronze wire,  $\frac{1}{8}$ th of an inch in diameter, bent upon itself in the middle, and forming two spiral turns round the wrist.

- (3.) By WALTER WALLACE, Esq., Sculptor, through MILLEN COUGH-TREY, M.B.

Three small Heads in Terra Cotta; one, a female with braided hair,  $1\frac{1}{2}$  inch in height; another, a female with the hair dressed back, and partially covered,  $1\frac{3}{4}$  inch in height; the third, considerably mutilated, and having the hair encircling the head in a roll, or a headdress with a large border.

Statuette in Terra Cotta, with flowing drapery,  $4\frac{1}{2}$  inches high.

Head of a small Egyptian figure in stone, with conical cap, 3 inches high.

(4.) By THOMAS B. JOHNSTON, Esq.

Three War Clubs, 3 ft. 2 in., 2 ft. 6 in., and 2 ft. 8 in. in length, round, curved, and forked at the heavy end, from the South Seas.

Three long Spears, from 14 to 10 feet in length, pointed and barbed with hardwood.

(5.) By the Rev. JAMES RUSSELL, Walls, Shetland.

Sinkstone for a hand-line, recently in use among Shetland fishermen. It is an oval water-rolled pebble,  $5\frac{1}{2}$  inches long, with two grooves made round it at right angles to each other, for convenience of tying it to the hand-line.

(6.) By W. M. WYLIE, Esq., B.A., Blackwater, Hants.

Two Daggers, a Lamp, and Patella in Bronze, being specimens of spurious Antiquities recently manufactured in London, and represented to have been dug up from the bed of the Thames.

(7.) By the AMERICAN PHILOSOPHICAL SOCIETY.

Proceedings of the American Philosophical Society. Vol. XI. 8vo. 1870.

Transactions of the American Philosophical Society. Vol. XIV. Part 1. 4to. 1870.

(8.) By the ESSEX INSTITUTE.

Bulletin of the Essex Institute for 1869. 8vo.

Historical Collections of the Essex Institute. Vol. X. 1870.

(9.) By the SMITHSONIAN INSTITUTE.

Smithsonian Contributions to Knowledge. Vol. XVII. 4to. 1871.

Records and Results of the Magnetic Survey of Pennsylvania. 4to. 1863.

Report of the Smithsonian Institute for the year 1869. 8vo. 1870.

(10.) By the ROYAL SOCIETY OF NORTHERN ANTIQUARIES, Copenhagen.

Aarbøger for Nordisk Oldkyndighed og Historie. 8vo. 1870.

(11.) By the UNIVERSITY OF GLASGOW.

The Glasgow University Calendar for 1871.

(12.) By ST JOHN VINCENT DAY, Esq., C.E., the AUTHOR.

Some Evidences as to the Early Use of Iron, &c. 8vo, pp. 15. Plates.

(13.) By the MANX SOCIETY.

The Old Historians of the Isle of Man. 8vo. 1871.

The following Articles were exhibited :—

(1.) By D. CUNNINGHAM, Esq., Chapelton, Ardrossan.

An Axe-hammer of Granite,  $4\frac{1}{2}$  inches in length,  $2\frac{1}{2}$  inches across the rounded face, which has a bluntish edge (see Plate XXII. fig. 1). It narrows to  $1\frac{1}{2}$  inch at the haft-hole, which is an inch in diameter. It has been bored from both sides, and the borings have not met accurately. Round the haft-hole, on both sides, there is an ornamental band of three incised lines. The hammer end terminates in a round flat space, three fourths of an inch in diameter.

This axe-hammer was found, as stated in a letter from Mr Cunningham, on the farm of Chapelton, near Ardrossan, Ayrshire, in the spring of 1865. Mr Cunningham was having a field subsoiled, when one of the ploughs struck the upper part of an urn, and shattered it. His son, who was present, examined the contents, and found that the urn was placed with its mouth downwards, and had some calcined bones and the hammer in it. A little to the east was a smaller urn, also with calcined bones.

(2.) By J. R. BROWN, Esq., M.D., Saltcoats, Ardrossan.

Axe-hammer of Greenstone, 5 inches in length, 3 inches across the face, and having a haft-hole 1 inch in diameter. (See Plate XXII. fig. 2.) It is considerably contracted in the middle, and has an ornamental border of two parallel incised lines round each side. The rounded axe-like edge is sharper than in the previous specimen, and the hammer end presents a flattened oval, 1 inch in its longest diameter. There are two projecting

protuberances or knobs in the centre of each side, opposite the haft-hole. It was turned up by the plough in a field on the top of Montfode Braes, a little to the north of Ardrossan, and near the remains of several ancient forts.

(3.) By W. J. ARMSTRONG, Esq., Kelburne.

Bronze lion-shaped Ewer and Bronze Pot, found in a canoe, in the Loch of Kilbirnie, Ayrshire.

[For a description of these articles and the circumstances in which they were found, see subsequent Paper by R. W. Cochrane Patrick, Esq., B.A., LL.B., F.S.A. Scot.]

(4.) By KEITH-STEWART MACKENZIE of Seaforth, Esq., F.S.A. Scot.

Two Medallions, having engraved on the obverse a female bust, with the letters M R, and on the reverse a shield of arms.

Mr Henry Laing, to whom they have been submitted, states that the quartered coat on the one shield appears at first sight to be for the Earl of Buchan; the first is Stewart, and the second Cuming, both of which are certainly borne by the Earl; but the third and fourth quarters seem to have no connection with the coat of the Earl, so far as known at present. The fourth quarter is the coat of Balliol and also of Landel, which is now carried by the Earl of Home. The motto, "Judge Nought," certainly belongs to Buchan. Whatever date may be assigned to the medallions themselves, the engraved shields are certainly not earlier than the beginning of the eighteenth century.

The following Communications were read :—

# I.

AN INQUIRY AS TO THE BIRTHPLACE OF ST PATRICK. By J. H. TURNER, M.A. COMMUNICATED BY JOHN STUART, Esq., LL.D., SECRETARY.

(This Paper is reserved for the *Archæologia Scotica*, Vol. V.)



## II.

NOTICE OF SOME ANTIQUITIES RECENTLY DISCOVERED IN NORTH AYRSHIRE. BY R. W. COCHRANE PATRICK OF LADYLAND, ESQ., B.A., LL.B., F.S.A. SCOT. (PLATE XXII.)

The following articles are noticed in this account and now exhibited to the meeting, viz. :—Nos. 1 and 2, Lion-shaped Ewer and three-legged Pot of bronze, found in an old canoe in the Loch of Kilbirnie ; No. 3, Stone Hammer, found on the farm of Chapelton, near West Kilbride ; No. 4, Stone Hammer, found on the farm of Montfode, near Ardrossan.

Nos. 1 and 2.—These extremely curious relics—for the opportunity of exhibiting which I am indebted to Mr W. J. Armstrong, factor to the Right Hon. the Earl of Glasgow—were found in Kilbirnie Loch in 1868 or 1869, under the following circumstances :—

The Glengarnock Iron Company have been, for some years, depositing the refuse from their works along the south-western margin of the loch. The enormous weight of this mass of slag has had the effect of pushing up the mud from the margin of the water and forcing it inwards to the loch. Amongst the mud, thus pressed up, the remains of several ancient canoes have been at various times discovered, and in one of the most perfect of these the bronze articles now exhibited were found.

It is much to be regretted that accurate measurements and drawings of this canoe had not been taken at the time. Exposure to the air, and the unrestrained curiosity of sightseers, soon demolished it entirely ; and at the present moment no part of it exists beyond a few fragments in the possession of different individuals. The following description of it is taken from the information obligingly given to me by Mr Thos. Hislop, who first noticed it in the mud, and who was present during the whole time it was being excavated, and saw the articles found in it.

The canoe was discovered lying about 20 feet north of a small artificial island—itself an object of great interest, but now unfortunately overwhelmed by the advance of the iron-stone rubbish—at the south-western end of the loch. It was hollowed out of a single tree, and was about 18 feet in length, 3 feet in breadth, and close on 2 feet in depth. It was broadest at the stern, which was square, and tapered towards the bow ;

and was entire with the exception of about 2 feet broken off the narrowest end.

There were indications that a hole in the bottom had been mended, and some wooden pins were in it which may have been used for this purpose, or for fixing at the side what is described to me as a sort of bracket. In the mud which filled the hollow of the canoe the bronze articles were found; and also a thin plate or piece of metal which cannot now be recovered.

The "lion" stands  $8\frac{1}{2}$  inches from the ground at the highest part; is 8 inches in length and  $8\frac{1}{2}$  in girth round the body, and weighs 4 lbs. It is made of a yellowish bronze, and seems to have been used for holding liquid. It bears a striking resemblance, though smaller and less ornamented, to one figured and described at p. 556 of Wilson's "Prehistoric Annals of Scotland" (edition 1851). It will be observed that the one now shown wants the curious ornament projecting from the breast, though the place where it has been inserted is quite apparent.

The bronze pot is 11 inches across the mouth, stands 14 inches high, and weighs 28 lbs. It resembles what are often called Roman camp kettles. There are indications of its having been very ingeniously mended.

It is difficult to account for these articles, which apparently belong to a comparatively late period, being found in a canoe which was evidently of a much earlier age. It is possible that the connection was merely accidental, and that the articles, which are of considerable weight, when they sank, buried themselves in the canoe already resting at the bottom. Or, on the other hand, it may be, that the canoe, though made and belonging originally to a very primitive period, continued in use down to the later one, and was lost with the articles in it; a theory which, I am somewhat inclined to think, is the more probable.

No. 3. *Stone Hammer*.—This very fine specimen was found on the farm of Chapleton (occupied by Mr David Cunninghame), in the spring of 1865. From the intelligent description given me by Mr Cunninghame, jun., who was present at the discovery, I am enabled to furnish the following particulars. It was found under a small inverted urn, immediately beside a larger urn containing remains of bones, &c. The plough broke the top of the larger urn, and in trying to get the remains of it out by loosening the ground around about it, the smaller one was unluckily broken, but the hammer was noticed and preserved. (See Plate XXII. fig. 1.)



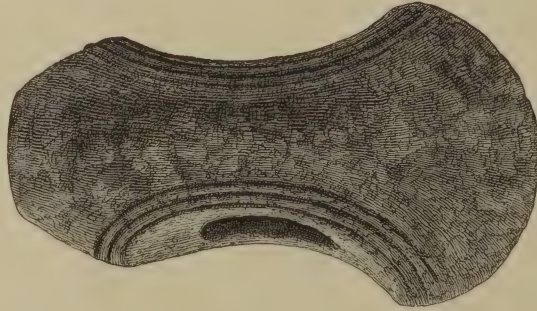


Fig. 1.

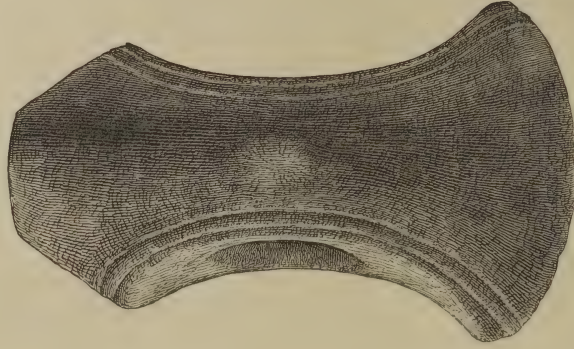


Fig. 2.

STONE AXE-HAMMERS FOUND IN AYRSHIRE.

Fig. 1. Exhibited by Mr D. Cunningham, Chapelton, Ayrshire.

Fig. 2. Exhibited by Dr. Brown, Saltcoats, Ayrshire.



No. 4.—The other stone hammer (Plate XXII. fig. 2) is also a very fine specimen. It was found the year before, not a very great distance from where the first was discovered, and like it, is in a high state of preservation. Dr Brown, M.D., of Salteoats, to whom the hammer belongs, informs me that it was turned up by the plough in a field on the top of Montfode Braes, a little to the north of Ardrossan, and near the remains of several ancient forts. The whole of this district is rich in archæological remains, and deserves to be better explored than it has hitherto been.

### III.

NOTICE OF AUDUN, AN OLD CALEDONIAN FORT ON BENLEDI. By COLONEL SIR JAMES EDWARD ALEXANDER, K.C.L.S., F.R.S.E., AND F.S.A. SCOT. (SKETCHES AND PLAN WERE EXHIBITED.)

Benledi, the "mountain of God," nearly 3000 feet high, is the grand feature in the landscape at Callander, lifting its majestic (and for months snow-crowned) head among the other conspicuous summits of the Grampian range.

The north side of the mountain, rugged and precipitous, flings its shadow into the waters of Loch Lubnaig; the crags of the eastern face look towards Callander; the south-west side is tame, and easier of ascent. High up the mountain is a small loch called Loch-an-Corp, or the Lake of the dead bodies, because a funeral party, crossing it on the ice, fell through and were drowned, on the way from Glenfinlas to the chapel of St Bride.

Mr Binning Home of Argaty, F.S.A. Scot., having informed me that he understood there were the remains of an interesting fort to be seen on one of the spurs on the south side of Benledi, I went with him there last year, and we found, after a climb of several hundred feet, a circular Caledonian fort overlooking the Coilantogle ford.

The gleaming waters of Loch Venachar and some wood appear in the distance, and a Roman station is on the plain below, and the whole locality is very interesting.

On the south of the old fort there are inaccessible cliffs, and some trees amongst them. To the north the ground slopes off towards the summit

of the great Ben, and thus requires the defence of three lines of ramparts and ditches. The larger or outer entrance was probably for the castle. The inner fort is circular, and in the centre is a well, now filled with stones for fear of accidents to sheep and cattle grazing around it. Mr Home and myself measured the fort,—63 feet long, and the same in breadth. The entrance is on the west side, and the first rampart there to the next is 29 feet, and from the second to the third, 25 feet, and to an imperfect fourth line of rampart, 19 feet.

I was quite pleased to see the ramparts and ditches so well marked and preserved. A large stone on the next hillside, and well seen by travellers passing to the Trosachs, marks where the old fort is to be examined. *AU DUN* is the name by which it is known in the vicinity.

[This Dun is also described, and a plan given at p. 36 of this volume.]

#### IV.

NOTES OF THE EXAMINATION OF A CRANNOG IN THE BLACK LOCH,  
ANCIENTLY CALLED “LOCH INCH-CRYNDIL,” WIGTOWNSHIRE.  
By CHARLES E. DALRYMPLE, Esq., F.S.A. Scot.

The Black and the White Lochs, in the parish of Inch, Wigtownshire, lie near together, and parallel to each other, the former being about one and a-half, the latter about one mile in length, and each about half-a-mile broad. Their general direction lengthways is from north-west to south-east. They are separated by a ridge three-quarters of a mile long and from one to two furlongs in width, on which is laid out the old and stately “pleasance” of Castle Kennedy. At the south end of this ridge they are connected by a straight and formal canal, with terraced banks, running through a depression in the ground, where, in former days, there probably was a natural channel. Their only feeder is a burn running down into the Black Loch from the range of rocky hills which borders it on the north-east side, and their outfall is by another burn flowing from the northern end of the same loch into the sea at Loch-Ryan. Both lochs are unusually free from peat moss, their shores and bottom being almost everywhere shingly, with blue clay underlying in many places.

The western and smaller lake, now known as “The White Loch,” was formerly called “The Loch of the Inch,” from the single “inch,” or island,

lying close to its western shore, near the churchyard and ruined parish church of Inch. This island is too high and too extensive to be likely to be artificial, and a pretty close examination has failed to discover signs of its being other than natural, but its position and some of its features suggest that it has been cut off from the shore by the formation of an artificial channel, turning a peninsula into an island. A house of the Earls of Cassilis stood upon it up to the beginning of the seventeenth century, when they built, on the highest part of the ridge which divides the lochs, the tower known as Castle Kennedy (now superseded by Lord Stair's modern mansion, named Lochinch), but it is supposed that, at a still earlier period, the first parish church of Inch stood here, as a burying-ground could be traced on the island within the last fifty years.

A small canoe, dug out of a single oak tree, was lately found in this loch, close to the shore, and near the narrow channel which cuts off the island from the land.

The larger, or "Black Loch," in which the crannog is situated, anciently bore the name of "Loch Inch-Cryndil," as given in Pont's map of the district, which also shows the island, and it was from the fact that there is still extant a Celtic patronymic, "MacCrindle," that suggested to the writer that it might be from this island, the only one in the loch of any importance, that it derived its name; and that, if so, the island might have been connected with some individual, or tribe, in Celtic times. This led to an application to Lord Stair for permission to examine it, which was most readily accorded, and every assistance given.

The island is oval in shape, 180 feet long and 135 feet broad in the widest part. It has tolerably deep water round it, excepting towards the nearest shore, a distance of about 100 yards, where in dry seasons it does not exceed six or seven feet. It lies in the south-western part of the loch, near the entrance to the canal before mentioned.

The writer, accompanied by Mr Augustus Stephenson of the Treasury, whose quick eye for details proved of great value during two days of work, first carefully examined the shores of the island, seeking for traces of beams or piles, but without success, except at one spot on the north-west side, where the top of a single oak pile projected above the water, weathered and worn down to the appearance of an old tusk, or tooth, and surrounded by stones, of which a quantity had been brought, in the course of improve-

ments at Castle Kennedy, and thrown down on the beach, and in the water, to prevent, probably, the wash of the waves on this, the weather side, from wearing away the soil of the island.

In the middle of the island, which is thickly covered with trees of 30 or 40 years' growth, but with a few much older towards the south end, a circular mound appeared, resembling a low tumulus, forty-five feet in diameter, rising in the centre to about three and a-half feet in height, round the edges of which there were, in some parts, traces of a low wall of three or four courses of small stones, like a miniature dike. The island rises gradually from the water to the base of the mound, which at that season (the beginning of October) was about eighteen inches above it, so that the top of the mound, which was the highest part of the island, was then about five feet above the loch. The appearance of the mound and the oak pile giving an archaic character to the island, an examination by digging was commenced, Mr Fowler, superintendent of the pleasure-grounds at Loch Inch and Castle Kennedy, placing a force of from twelve to fifteen labourers at our disposal.

Spacious cuttings were made in the centre, afterwards extended to the edge of the mound in various directions, with the following results:—The island proved to have been a crannog, formed apparently upon a shoal in the lake, composed of shingle over blue clay, the object having obviously been to raise a platform which would be above the water even when the lake was at its fullest, as, even at the present time there is a considerable rise in the wet months, although pains are taken to keep clear the outfall from the loch. The mound was found to be of earth and stones, mixed, extending beneath which, at a depth of five feet in the centre but decreasing in depth towards the edge, was found a flooring of trunks of trees, oak and alder, in two layers, crossing each other at right angles in some places, in others lying rather confusedly. These were, mostly, not more than six or eight inches in diameter, but one solitary trunk of an oak, near the centre, lying at a higher level, and possibly the remains of a hut or other superstructure, was fully two feet in diameter, although much decayed. These layers of wood were traced as having covered a circular space, about fifty feet in diameter, thus agreeing nearly with the size as well as the shape of the mound.

At different levels, from that of a few inches above the timber flooring



to three feet higher, and over the whole mound, were found many fire-places, one or two covered over with two long stones, leaning against each other lengthways, like the roof of a house, but most of them formed by placing two long narrow stones (fragments of the rock of the district, which breaks off easily in that form) parallel with each other, leaving a space between, which was paved with small stones and formed a hearth. Large quantities of bones of animals, mostly more or less burnt, and, whether flat or round bones, frequently split, were found mixed with the ashes and charcoal which lay in and around these hearths, in some places extending over wide spaces, which were marked, also, by masses of burnt yellow clay.

At different levels, in different parts of the mound, were found the few objects exhibited. At one fire-place, near the centre, about three feet above the timbers, were the triangular piece of bronze and the fragment of iron, possibly the handle of a knife. At another, a little way off, two feet above the timbers, the fragment of a glass armlet. Again, about half way between the centre and margin of the mound, only a few inches above the timber, with a great quantity of the burnt clay, and many bones, one of them a small jaw of a boar with the tusk still in it, was the fragment of a bone comb. About six feet south of the centre, and sixteen inches above the timbers, was found the small oblong object of bronze, perforated, and a few feet from it, one foot above the timbers, a portion of a small disk of stone with the edge bevelled off. In other places, about two feet below the surface, two copper coins of the seventeenth century.

From the difference of level of the various fire-places, and their position towards each other, it would appear that the surface of the crannog had become gradually raised in the lapse of ages, the earlier deposits becoming buried under new layers of soil, partly composed of accumulated refuse, as in the kitchen middens; but the fact of the timbers which had originally floored the crannog having, in many places, entirely disappeared through decay, the soil above would consequently sink, which might account in some cases for the lower level of some of the remains. Enough, however, was left evidently *in situ* to show that they must have been deposited at different dates. It is known, too, that the island has been planted two or three times, and that considerable quantities of soil and stones have been added to it. The two feet of soil which covered the uppermost

remains, and which so much raised the centre of the crannog, was probably added, in great part, about 1720, when Field-Marshal the Earl of Stair laid out the grounds of Castle Kennedy. Some of these operations may, to some extent, have disturbed the remains. They would, at all events, account for the modern coins found so far below the surface. The extent of the mound would appear to have been that of the crannog proper, but the existence of the solitary pile fifty feet from it, on the weather side of the island, makes it probable that either a breakwater had been placed there, as was also supposed to be the case in Dowalton Loch, or a "cheveaux-de-frise" of sharp-pointed stakes for defence.

If, as we cannot doubt, Dr Keller is right in saying that "the crannogs appear to be strongholds, castles, belonging to *individuals*," and that they "served as places of refuge for single chieftains, their families and property," we are justified in supposing that this crannog of Inch-Cryndil was constructed, or at least occupied, by some chief or leader in Celtic times, bearing that Celtic name.

The examination of the mound towards the outer edges was completed by Mr Fowler and Mr M'Ilwraith of Stranraer. The reports of those gentlemen are embodied in the foregoing notes. No further relics were found, but the extent and form of the crannog were satisfactorily verified.

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MONDAY, 12th February 1872.

THOMAS B. JOHNSTON, Esq., Vice-President, in the Chair.

The Right Hon. the EARL OF STAIR, K.T., a Peer of the Realm, was admitted without ballot; and after a ballot, the following Gentlemen were admitted Fellows of the Society:—

THOMAS W. M'DOWALL, M.D., Inverness District Asylum.

HENRY MEREWETHER, Esq., 16 Stafford Street.

HUGH DAVIDSON, Esq., Procurator Fiscal, Lanark.

The following Gentlemen were also elected Corresponding Members of the Society:—

REV. GEORGE WILSON, F. C. Manse, Glenluce, Wigtownshire.

ROBERT INNES SHEARER, Esq., Thrumster, Caithness.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors :—

(1.) By Mr JAMES JEFFREY, Migvie, Tarland, Aberdeenshire.

Stone Ball,  $2\frac{1}{2}$  inches diameter, having its circumference divided into six circular projecting discs of  $1\frac{1}{2}$  inch diameter, found at Migvie.

Polished Celt of flinty slate, 4 inches by 2 inches, broken at the small end, found at Migvie.

(2.) By R. LONSDALE, Esq., 26 Old Bond Street, London.

Holograph Letter of George III., being a Memorandum to Lord Carmarthen, as follows :—

“The more general Lord Carmarthen’s answer to C<sup>t</sup> Kageneck is worded the better perhaps if only expressing that the Emperor having no plans of aggrandisement is a very agreeable communication.

(Signed) “G. R.

“QUEEN’S HOUSE, *May 26th 1785.*”

Report by M. Faraday of the examination of some Sailcloth, tested for the presence of Mercury, &c., dated “Royal Institution, 5th May 1837.”

Letter of H. Bonnycastle, dated “Blackheath, 10th December 1833.”

Letter of Barbara Hofland to John Taylor, Esq., stating that she had sent him another of her tales, and thanking him for his review of “Decision,” &c. Aug. 18th, no date.

Letter of J. Periera, describing an apparatus for making hydrogen and also for making oxygen, &c., dated “December 24th, 1870, Finsbury Square, London.”

Letter signed by the Duke of Chandos, 28th July 1789.

Draft of Letter from Percy, Bishop of Dromore.

Letter from C. Wesley, Organist and Composer, “Wednesday, 10th of April,” no date.

Letter from Cardinal Ottoboni, dated “Roma, 17 Mart. 1690.”

Account of “sums due for the Queen’s tax at Lady-Day, 1714, from the Governors of Her Majestie’s Theatre Royal,” signed by Robt. Wilkes, Barton Booth, and Colley Cibber.

Memorandum by R. Westall, R.A. (Artist).

Autograph of Sir Thos. Laurence.

(3.) By NORMAN MACBEATH, Esq., R.S.A.

Roman Tile, found at the Salberg, Germany.

(4.) By WILLIAM GRANT, Esq., Lochend Road.

Flattened Oblong Stone, 6 inches in length, with a hole about  $\frac{1}{4}$  inch diameter through either end, found underneath the foundation of Leith Pier. It has the date 1679 scratched rudely into one of its flat surfaces.

(5.) By A. J. DENNISTON BROWN, Esq. of Balloch Castle, F.S.A. Scot.

Flag of White Silk with a Blue Saltire, and in the centre a Thistle surmounted by a Crown, over which is the letter K and the motto "*Nemo me impune lacessit*," with the date 1716.

(6.) By WILLIAM STIRLING, Esq., B.Sc.

Shilling of Queen Elizabeth, found in the Back Walk, Stirling.

(7.) By the CURATORS of the H. M. SIGNET LIBRARY, through DAVID LAING, Esq., Foreign Secretary S.A. Scot.

Catalogue of Signet Library. Part 1. A to L. Edin. 1871. 4to.

(8.) By THOMAS B. JOHNSTON, Esq., V.P.S.A. Scot.

Three Volumes of Billets and Circulars of the Society of Antiquaries, 1824 to 1871.

(9.) By CHARLES STEPHEN LESLIE, Esq. of Balquhain, F.S.A. Scot.

Historical Records of the Family of Leslie. Three vols. 8vo.

(10.) By the LORD PROVOST, MAGISTRATES, and COUNCIL, through J. D. MARWICK, Esq., City Clerk, F.S.A. Scot.

Charters and Documents relating to Trinity Church Hospital, 1460-1661. Edin. 1871. 4to.

(11.) By the ROYAL UNIVERSITY, Christiania.

Foreningen til Nordske Fortidsmindesterkers Bevaring, 1869. Christiania. 1871. 8vo.

Meddelelser fra det Norske Rigsarchiv. Forste Bind. Christiania. 1871. 8vo.



Det Norske Oldskriftselskabs Samlinger. vii. 8vo.

Mariu Saga. Tredie og Fjerde hefte. Christiania. 1871. 8vo.

Konunga Sögur. Andet hefte. 1871. 8vo.

Diplomatarium Norvegicum. viii. 1871. 8vo.

Ibn Fozlan, om Nordske Begravelsesskikke; fra det Arabiske, af C. A.

Holmboe. 8vo. pp. 15.

Norske Vaegtlodder fra Fjortende Hundrede. 8vo, pp. 14.

En Buddhistik Legende. 8vo, pp. 14.

Det Chinesiske Shakspil. 8vo, pp. 8.

Et Guldbrecteat Praeg. 8vo, pp. 8.

Fortegnelse over Mynter fra Middlealderen fundne i Aaret 1866, af C. Schive. 8vo, pp. 20.

Fra Raknehaugen, Antiquarisk Meddelelse, af A. Lorange. 8vo, pp. 10.

Om et Infald i Egypten af Middelhavsfolk ved Trojanerkrigens Tider, af J. Lieblein. 8vo, pp. 30.

Uaar og Hungersnod i Norge 1840-1743, af L. L. Daae. 8vo, pp. 10.

There were also exhibited :—

(1.) By WILLIAM SIMPSON, Esq., London.

Three Himalayan Brooches and Water-colour Sketch of the Dress of a Woman of Bussahir, showing the mode of wearing the brooch and dress of one piece. (See subsequent Communication by Mr Simpson.)

(2.) By Miss C. F. GORDON-CUMMING.

Himalayan Brooch, with Triple Chain—of brass.

(3.) By LADY DUNBAR of Northfield.

Kabyle Brooches, Necklaces, and Bracelets, and Sketches of Kabyle Ornaments.

(4.) By the QUEEN'S and LORD TREASURER'S REMEMBRANCER.

Five Silver Armlets of penannular form, found in Cists at Kirk o' Banks, Caithness. (See subsequent Communication by Mr Campbell.)

The following Communications were read :—

## I.

DESCRIPTIVE LIST OF ANTIQUITIES NEAR LOCH ETIVE. BY R. ANGUS SMITH, Ph.D., F.R.S., &c., MANCHESTER. PART II. (PLATES XXIII. AND XXIV.)

I brought before this Society last year a list, with a short description of antiquities at and near the mouth of Loch Etive, and I wish now to add some fuller explanations, and to make some additions. I shall begin with the largest, the centre point, Dun Macuisneachan, or Dun Mhac Usnach, commonly called Macsniochan. It must not be forgotten that this little corner of Argyllshire contains nearly all that I know of Scottish archaeology, and I bring my small contribution with diffidence.

The well which exists on the dun has been, for at least a hundred years, connected by some persons with that stream which is found on the opposite hill of Dun (Valanree), Bhaile an Rìgh. The latest result of digging there was mentioned when the first paper was passing through the press, but it must now be given in detail. This well, which men living at present had considered very deep, and whose fathers, when they threw down stones, were said to have waited a perceptible time till the sound shewed the bottom to be reached, was found, on being cleared out, to be at the very deepest part only  $5\frac{1}{2}$  feet, but even that was only for a small space. The mysterious water was found coming through a crack in the rock, and was no more than could be accounted for by the drainage ground of the dun, a few feet above it, and in direct contact. There seems to have been an opportunity taken to remove the friable rock, so as to gain depth, but any attempt to go beyond the solid hard slate below was not made. That rock slopes down on one side, making the depth from 3 feet to about  $5\frac{1}{2}$  feet. In such matters we must draw conclusions according to our own judgment; they are not to be absolutely proved. My conclusion is, that the well proves an incapacity to penetrate hard stone, even where there was a will to do so. At the junction of the brittle and compact rock, the fissure or apparent crack is seen moist with water trickling out. The drainage ground in a wet climate is enough for as many people as could live comfortably in the dun, even if they used more water than we supposed them to have done in early days. The story of the supply from the opposite hill, and

that of the wooden pipes, found recorded in books for a hundred years, may now disappear.

*Vitrified Forts.*—I am disposed to trouble you with an opinion regarding the use and mode of building the forts of partly vitrified and partly loose stones. When opening a large cairn, to be described immediately, it was found essential to be very careful lest legs should be broken by the fall of the stones. The boulders being roundish, it was necessary to make a very long slope before we found it safe to remove the lower and heavier. This work connected itself in my mind with the appearance of the walls at Caterthun in Forfar, where are enormous piles of loose stones. It seems as if these had once been built up as a wall, at least I perceived what I took to be indications of order, or slight glimpses of a double wall, with connecting walls between. But all are in a ruinous state, the boulders having rolled down. That they did build walls of boulders of a similar kind in a quite perpendicular manner in early times, was known to me from seeing a passage into the centre of a cairn now laid open at Kilmartin. Let us suppose such a wall to have been built to surround a fort. An enemy could loosen a stone easily, and one stone so removed might cause cartloads to fall, making a breach in the wall at once. This might even be done with such care and speed that the enemy might have time to run away before being injured. The amount which is about to fall is not moved at once: first one or two stones roll down; the movement loosens those above, and they go on increasing like an avalanche. This must soon have called out the idea of making the foundations solid, and the first notion being rude and violent, ended in the use of fire. But the builders do not seem to have made the whole wall solid to the top; had they done this, they would have lost one of the advantages of a loose wall, namely, the opportunity it gives of throwing down pieces on an enemy's head, an old fashion, even on classic ground. The vitrified wall was therefore finished by being raised higher with loose stones.

In the drawings of the cairn figured here, large plain blocks are seen below, and every wall is finished with small pieces above.

It was not necessary to go above the working height of a man with the vitrification. By speaking in this way I seek to picture the conditions sought to be attained by the builders of vitrified forts. We do not find that the vitrified walls were ever high; whilst loose stones are, if not

always, at least sometimes, still found above them. Perhaps the state of things is best seen at Noath, where there is a very broad vitrified base, as if to support the loose stones above. If we suppose the vitrified wall to have been high, and the loose wall to have been merely an inferior building made after the decay of the other, we lead ourselves into more distant ages and greater difficulties, without a sufficient reason. It is pleasant when we can bring everything within an intelligible period, and to do this one avoids excessive and geological epochs when possible. These early periods seem to have been attended with few changes; after the beginning of progress the eras of change seem to have come nearer to each other, and now they are so close that five or ten years make a wonderful difference in external life and in modes of thought.

*Legend of the Sons of Uisneach.*—Since the aim of antiquarian research is to learn the history of ideas as well as of materials of outward civilisation and barbarism, it is by no means necessary for us, in examining the past, to keep to written or oral traditions regarding facts. If we seek the feelings and habits as shown in romance, we sometimes obtain allusions which are as valuable to us as if they were records in the gravest and best attested history. In speaking of vitrified forts, we have no traditions which name them as such; even romance is almost silent, whilst history has scarcely as yet begun to speak. You will excuse me, therefore, if I seek, out of some names and allusions, to try to connect romantic history with them. I cannot yet hope to do the same with exact history. In doing so, however, I am doing nothing original in idea; I only follow Mr Skene, who has already begun it in his introduction to the Dean of Lismore's book, p. lxxxi. That which I bring is merely a commentary on the paragraph and note:—

“The children of Uisneach were Cruithne, and must have preceded the Scots, for the great scene of their Scotch adventures are the districts of Lorn, Loch Awe, and Cowall, afterwards in possession of the Dalriadic Scots; thus, in the vicinity of Oban, we have Dun Mhic Uisneachan, now corruptly called in guide-books Dun Mac Sniachan, a fort with vitrified remains; and here we have in Loch Etive, Glen Uisneach and Suidhe Deardhuil. The names of the three sons of Uisneach were Ainle, Ardan, and Naoise; and it is remarkable that Adamnan, in his Life of St Columba, written in the seventh century, appears to mention only three



localities in connection with St Columba's journey to the palace of the King of the Piets, near Loch Ness, and these are Cainle, Arcardan, and the Flumen Nesæ. Two vitrified forts in the neighbourhood of Loch Ness are called Dun Deardhuil." And in a note,—“It is remarkable that the ancient legends of Cuchullin and the sons of Uisneach connect them with those remarkable structures called vitrified forts. Dun Scathaig, Dun Mhic Uisneachan, and Deardhuil are vitrified forts, and the latter is a common name for them. There is probably a mythic meaning under this.”

In every account given of the district we have the words Beregonium and Dun Maesniochan. Mr Skene first showed us how to write the name. He also tells us the name of the family who settled there, according to accounts, for a time, and mentions the remarkable connection between them and Cuchullin with vitrified forts in other places as well. This really is the pith of the matter, and with Mr Skene on the ground of Celtic history or romance being master, I have no desire to differ, I am content to admire. My object, however, is to illustrate whatever can be made clearer about this part of Lorn, and also to find what real interest there is connected with it; and if it is not against the wishes of the Society, I will spend a few minutes in analysing the story more fully, and in showing the hold it had taken on the locality long ago, at least as long as the date of the earliest manuscript. The names are as distinctly on the ground as ever, but the story has left the people. The date of the personages is said by Irish writers to be the first century, but let us believe with Mr Skene that the times before the fifth century are to be considered uncertain. I must remark on this, however, that, since writing, as we are told by the same author, was introduced into Ireland in the fifth century, we may fairly allow a good deal of truth in the transactions said to have occurred only two or three or even four centuries before. We must allow something for tradition, especially in early times. A few centuries are quite unable to eradicate some facts, although a few years wipe out others. When, therefore, the sons of Uisneach are said to have lived at the time of Christ, I am quite disposed to think that they may have lived within the limits of tradition, and do not confound them with the fabulous kings who go up in a long race from Ireland to the garden of Eden. Tradition already has done wonders for the Uisneachs we know, because it has stamped their names on the hills and rocks, islands and

woods, and even a farm holds one. I see no reason for looking on the story alluded to as mythical, but it must be remembered that in all probability the events are brought forward in the spirit and with the manners of the writer instead of the actors, and that it is an old tale, garnished as Virgil did that of Æneas, or Tennyson those of Arthur. When we know the date of the writing or composition, we shall know the manners of the times pictured. Meantime, the story tells of people who lived at various places of the district and left their mark, and of the opinions regarding them entertained by people in times nominally perhaps within our history, but when the place was but little known to those outside it. It tells of Deirdri and the daughter of Felim, storyteller to the King of Ulster, Concobhar or Conor. Deirdri went off with Naisi, a son of Uisneach, although she was betrothed to Conor. (That part of the story which does not suit our purpose is left out.) Naisi's two brothers and many attendants went with him, and obtained a territory from the King of Alba. There they seem to have had great success, but being fond of their native country, returned as soon as Conor sent for them. The messenger who enticed them was called Fergus; it is said that he and his two sons and shield-bearer alone went, and they moved forward "to the forts of the sons of Uisneach, and to the Lake Eitche in Alba." The Irish is, "Do gluaisedar rompa go daingen Mhac n'Uisneach acas go Loch n'Eitche an Albain." In other words, they came to the fort of Dun Mac Uisneachan (now a vitrified fort) at Loch Etive.

The valley of the Etive may be said to stop at Craig Valanree (Bhail an Righ), or the rock of the King's fort at the mouth of Loch Etive, and under which there is a burying-place, in which the ancients buried perhaps persons connected with the fort. Loch Etive, we may suppose, would reach farther, that is to Ardnamucknish. In any case, the relation is definite, and as if to prevent all mistake. Another account says, "They sailed across the sea until they came to Loch Etive, to the island of the sons of Uisneach." These words are from the account given by Samuel Ferguson, Esq., Q.C., in the "Dublin University Magazine," 1834. The following, with the Irish above, is from the version in the volume of the Gaelic Society of Dublin, 1808. We are left uncertain in this version whether Fergus came at once to the fort or the island; but it is hinted Naisi they might be from home, as it is said, "They had

three booths of chase—one for cooking in, one for sleeping in, and one for sitting in."

"When Fergus came into the harbour, he sent out the shout of a mighty man of chase, and Naisi and Deirdri were sitting together, and the polished cabinet, that is the chess-board of Conor, was between them, and they were playing on it." Here is a little picture which is at least that which, to the narrator, is probable as having taken place at the fort, or at the island of the sons of Uisneach. Booths might even have been built on the fort, but these would not be the hunting booths. Fergus is said to have come into the harbour—*innbhar* or *inver*. If that were more than a small inlet it would not suit the fort, much less if it were the mouth of a river; but probably the word is used, as we suppose the rest of the story to be told, with romantic looseness. *Inlet* would suit well the island, to be afterwards described. It is remarkable how little the writer of the prose shows of a knowledge of Scotland, whilst the poems go into detail; at least the lament does so, justifying Mr Skene's remark, that they may be of different and earlier origin. We have Deirdri and Naisi playing at chess; the game is introduced again on a more important occasion, and is not improbable for pretty early times.

It is often said that the Gael on both sides the Irish Channel were one people, but this story speaks of a difference in accent or intonation farther back than we might have expected.

Fergus uttered his shout, which could quite well be heard in the fort from the landing-place. Naisi called out, "I hear the voice of an Eirinn-aich" (or Irishman); but Deirdri said, "No, it is the voice of an Albanaich" (or Scotch Highlander). Fergus called again, and Naisi then insisted that it was an Irishman; but Deirdri, although she knew it was so, denied it. The other brothers knew the shout also. If we could believe this tale to be an exact account of the events of the time, a good deal would be decided, but we can only believe it to be true of the time in which it was composed—very old certainly. It establishes a different mode of speaking in the two countries at the period; unfortunately, the date of first writing is unknown.

The four persons returned against the wish of only one of them, namely, the lady. They seem to have been well established in Scotland, and to have acquired an important place of residence. Deirdri said, "It

is not meet for them to go thither, for greater is their rule in Alba than the rule of Conor in Erin." Conor was then the king of Ulster. Naisi said, "Dearer to me is Eiri than Alba, though more should I obtain in Alba than Eirin." Deirdri's love of Alba or Scotland is put into a song, and one which has wonderful power in it, expressing a longing for the land she has left. There is an admiration of natural beauty such as would fit the sentiments of every tourist in the west—not strained, but wild and simple. I shall only quote the verse relating to Loch Etive, as that district is the object of study at present.

"Glen Etive, oh, Glen Etive ! (Eithe)  
There was raised my earliest home ;  
Beautiful its wood on rising,  
When the sun struck on Glen Etive."

This is Mr Skene's translation from the MS. in the Advocate's Library. This piece may be said to be the romance of the story of the sons of Uisneach and Deirdri. There is a third account, said by the Irish Gaelic Society to be the historic account, and there it is said the sons of Uisneach went to a wild part of Alba. This, in fact, the romance says by implication, and we have the hunting booths as well as the fort. These booths must have been put up in various places throughout Argyllshire, if the persons hunted in every glen mentioned in the song, and fished in the lakes. It is to be remarked, that the song mentions those very glens which we now admire—Glenmasson, Glendaruel, Glenorchy, Glen Etive. Glen Etive is still a very wild part, although at the extremity of that which we may call the glen, namely, including the loch and the whole long chasm of the Etive, there existed the fort spoken of, and probably a considerable population to whom it was interesting. The district was of sufficient importance to induce in later times the building of Dunstaffnage Castle and Ardchattan Priory. So wild are the banks of the upper loch, that none can travel over the whole who cannot walk about thirty miles on a rough road or wild mountain path. An Englishman has at length begun to build a large house in the valley. It is not quite certain that the meaning of Glen Etive was extended in the way spoken of, that is down to Connel, although a most natural way, but it is said the sun rose there on the woods ; to one at the westward, the sun



would always seem to be coming from the direction of upper Glen Etive in the morning.

The traditions are, that the beacons went up the side of Etive from Dun MacUisneachan at least up to Bunawe, as if the territory of the fort extended chiefly in that direction, and the hunting spoken of is chiefly towards the same, namely, Glenorchy, Glenmasson, &c. We may suppose that if the characters went there it was chiefly for hunting, although the love of the hills, the wilds, and the woods, was wonderfully developed. Naisi is said to have gone as far as Inverness on a fighting expedition. Glen Etive would be required for hunting and probably for protection, and there he might be supposed to rise in strength from the mere hunting booth to the strong fort. The name of Deirdri is still found there in *Grianan Dartheil*, the bower of Dartheil, or as Macpherson calls her, Darthula. This phrase is from the first Statistical Report of Scotland. Mr Skene gives the name *Suidhe Deardhuil*, the seat of Darthula, the nominative of *Deardhuil*, I suppose. But the residence was not confined to narrow glens.

Another song says, speaking of Alba—

“Delightful the sight of her harbours and glens,  
Delightful to sit looking on her hills.”

This points to extensive vision such as would suit the fort, but not the booths up the loch. This is from the Gaelic Society's version, the date of which is not given.

At the risk of being thought rather inclined to introduce romance than actual scientific evidence, I have so far analysed the portions of story which bear directly on the district in question and its temporary inhabitants. I think it is done strictly, and as I have no theory to support, I have no object in twisting the meaning of anything. We are not told how long this family stayed at Loch Etive, but it was long enough according to the story, to give them power in the country, and long enough, as we know to a certainty, to have connected their name with the fort to this very day, notwithstanding the attempts of guide-books and histories to give it a Latin and foreign designation. It is a thoroughly isolated hill, and such was sought; I know of none so isolated around. It had command of the sea for flight, and the woods of

Glen Etive were a hunting ground rendered by nature inaccessible except to a few. At present the passage is made easier of access by the few steam yachts that, five or six times in a season, trouble its surface. There are many beautiful spots on which to sit looking at the bays, and valleys, and mountains, as Deirdri is said to have done; tradition may be supposed to have kept her habit in memory by speaking of the spot where she sat basking in the sun higher up the valley, but it can scarcely be said that we can see the harbours of Alba from them. The word *grianan* is really a sunny place, but I have called it bower after an authority in Joyce's "Names of Places." The name of Uisneach is perpetuated up the loch, where we may suppose the booths are said to have been, or at least one of the stations. There is a small island, five miles from Bunawe, called Eilean Uisneachan. Mr Skene gives Glen Uisneach. So thoroughly is the whole story forgotten there, that the people imagine the name to have been that of some saint. The name is a strong corroboration of the truth of the early links between Scotland and Ireland, were it required. There has been no modern theory to refresh the memory and coin the names. The principal hero is also remembered in *Caoille Naois*, or the wood of Naisi, the name at present of a farm, in Muckairn, and a wood around. These two latter I received from the Rev. D. M'Calman of Ardochattan, as well as from D. Clerk, Esq. of Oban. One of the versions of the story mentions Fergus going to a wood near to the house. The story of Deirdri and Naisi, with the other two sons of Uisneach, Ainle and Ardan, must not be confounded with the pure romance so abundant in Ireland and its manuscripts. We have the names definitely taking hold of the ground and occupying the forts. A mere romancer does not manage this unless he rises to such a height that he is held not unequal to the historian. I have used the fullest account published and known to me. O'Curry gives one much shorter and leaving out nearly all the Scottish incident as well as the most interesting song of regret. That learned Celtic scholar considers the story to have been written certainly as early as the year 1000, but probably as soon as 600. Mr Skene tells us that the MS. in the Advocate's Library bears the date of 1238.<sup>1</sup> The song of Deirdri is there the same in the Gaelic as that published in

<sup>1</sup> We may ask does this number really mean the date?

Dublin by the Gaelic Society, trifles excepted. The island is well known. It appears that the hunters, or at least the writers, enjoyed hunting in Glenorchy, Glenmasson, Glendaruel, &c., with a gusto that few men in their holidays from towns can feel. We may suppose they set up booths in these valleys. They did not merely hunt, they fished, and enjoyed the abundance and goodness of their food.

The people are from Ireland: there seems no sufficient reason for disturbing that point. There is a hill in Westmeath of the name of Uisneach or Usnagh. See Professor O'Curry's note to "The Fate of the Children of Tuireann." Mr Skene finds the names of the sons of Usnoth about Loch Ness, and the *flumen Nasæ*, with two forts called Deardhuil. A poem quoted shows that Naisi went to Inverness. Deirdri, or Darthula, was doubtless beautiful, and, like Queen Mary Stuart, may have left her memory in many places during a restless life. As Naisi is said to have had as much power as Conor of Ulster, he may have had a lake named after him. There is, however, a symptom of what might be imagined as Dalriadic feeling, if it had been later on: it may be caused by the writer's notions and ornaments. Naisi fights in the north, but hunts in the south. He has friends in the south, which may easily be accounted for by insertions made at any period from times after the supposed date. The intimacy is shown with the Crinan district, when Naisi is said to have admired a daughter of the Lord of Duntroon; and

"He sent her a frisking doe,  
A hind of the forest, and a fawn at its feet;  
And he passed to her on a visit  
On his return from the host of Inverness."

Until we learn more, we need not object to look on the early date of the events as probable enough, whilst the smaller details must be at least as old as the manuscript; the names may be of any age, and the kernel within tradition for the earliest writers. The story is one of "the three most sorrowful tales of Ireland," for the return was tragical. The other two tales differ entirely, surpassing bounds of possibility.

Concerning the connection between the Duntroon or Kilmartin district and that of Dun Mac Uisneachan on Loch Etive, I must refer to the description and drawing of an urn found in the cairn at Achnacree. I

showed it to a learned friend, and he, after some days, said that the nearest approach to it was in some Gibraltar urns. I then showed it to another, who said that it had a likeness chiefly to Eastern urns; but after a while he said perhaps the nearest are some of Gibraltar. Canon Greenwell, on the other hand, made the remark that he believes it is similar to those he found at Kilmartin, and that they are peculiar to these corners of Argyllshire. This is true of fig. 2, Plate XXIV., compared with one shown by Canon Greenwell. (See Vol. VI. Plate XX. p. 340 Proceedings.) Thus the two places are connected in this manner as well as by the poem quoted. Most persons will not suppose the urns to be so late as Dalriadic times in Scotland. Even this, however, although it would agree with general belief, is hard to make certain among a people who have used querns in this century and pottery as rude as the oldest, and whose grave-stones at present are ruder than the oldest stone cist known to us.

I said I had no theory; but if not, I have one object—which is to see whether vitrified forts can be brought into the sphere of history or even dim tradition. The names of the places already may be said to do both, and a well fitting tradition may be said to become a part of undisputed history. The record is, that the sons of Uisneach lived there; I believe we may add also on forts near Loch Ness, as well as in places not vitrified. The story seems to be such as we might readily expect; and whilst the names are certain, the acts are probable and natural, with few exaggerations as exceptions, and the time itself is not beyond the presumed power of oral record to do its work until the age of writing began. The other two sorrowful tales of Ireland are not so old, according to Professor O'Curry, in language, and yet they are wild beyond all belief,—fairy tales, in fact, never intended to be believed, and it is a misfortune to this one to have been in such company.

Professor O'Curry says that Conchobhar, the king of Ulster, is an undoubted historical character, and his descendants were recognised and identified till the Conquest, and can even be traced till the present day.

If we recognise the truth of the later days of Irish tradition, and extend our partial belief to some time before the introduction of writing, we have the forts spoken of inhabited, but not necessarily built, by these people. These may have used old haunts; but this argu-



ment is weakened by three being of the same kind; and we may even bring a fourth into connection, since there was one at Duntroon, a place also mentioned in the tale. This fort is well seen now in the woods, as shown me by Mr Mapleton: it is vitrified. No one gave his name to this fort at Loch Etive after the sons of Uisneach. We may, if we choose, imagine their period to mark the end of the occupation.

I have not succeeded in proving the age,—do not think I am quite so easily satisfied,—but I have given that which I have (with some repetitions) and made the ground ready for more. Little as it is, it took me some trouble, although of a pleasant kind.

Since writing the above I have received an account, written by Dr M'Lachlan, of a MS. of this story in the Advocates' Library. It begins by saying, "This story is highly interesting, as it unfolds the primary cause of the Tain Bho-Cuailgne (the cattle spoil of Cooley) or the disastrous septennial war between Conaught and Ulster, so famous in the ancient records of Ireland." He calls the lady Darthula. I have used the name in the Irish, namely, Deirdri. If the Scottish MSS. are left hidden from the public, we cannot expect to follow them. It would have been better to have compared the versions found there, they might guide us to the date of the version which I have used. I particularly wish to say, that in this matter of the Uisneach family, I am claiming nothing new; I merely put together facts already printed, so as to enable ourselves to give them emphasis and to draw conclusions. One of these I must not forget,—it is obvious enough (but it will still be disagreeable to lovers of Fingal's Selma). According to the given accounts, the Uisneach story ought to have been some three hundred years old in the time of Fingal, and yet the names are rooted in the ground. Had Fingal come and lived grandly at the fort, calling it Selma, the old name would soon have disappeared before one who seems to have appropriated so many sites to do him honour. Even in Macpherson's Darthula it is Usnoth that is associated with Eta or Etive, and the sun and woods of Loch Etive are mentioned with reference to his domains, not Fingal's. In Campbell's "West Highland Tales" there are references to other versions of the story, but I do not find it easy to obtain them all. The Uisneach family are the oldest heroes of Loch Etive, and their name lives on the ground, their history and romance in books.

*The Baron's Cairn.*—I must now leave Dun Macuisneach and go to another spot, which, although unconnected with any family name, is of a still later date. The Baron's Cairn was mentioned in the previous paper given last year, and a place near it was noticed called *Cuairt a' Bharan*, the court of the Baron. These are both on the moss of Connel or Ledaig. The court consists of the greater part of a circle, which has been made by throwing up the soil, at present about three feet high, thus making a ditch outside, now filling up with peat moss. In the middle of the circle nearly is a raised and elongated mound. The circle is not complete to the north-west, and opposite this opening is a large mound nearly as large as the circle itself, and higher than its banks or walls. The wall round the circle has no peat upon it, but only a little grass on the rough gravel. The mound inside the circle is entirely of peat 3 to 4 feet deep, or much more than the moss around. The inner mound has evidently been raised artificially, and the same may be said of the outer mound; it must have been raised by hand—peat could not, so far as I know, grow to such a height about the level of the neighbourhood. I imagined this to be the home of the Baron whose cairn was near, and therefore cut trenches in several directions in order to find traces of the homestead. But within the circle the level part is only grass on a thin soil, the peat having been removed to make the mound, with a little gravel sufficient to indicate this. There were really no remains of a house; and it appeared much rather as if a Thing or Scandinavian court had been there. And this I do not doubt. The name and the appearance alike point to it. The courts were not held close to towns. The elongated mound in the centre was in all probability a platform of security, as well as of dignity, for the court. The outer mound opposite the open part of the circle would suit well as a place for spectators. Indeed, some such place was absolutely necessary, where outside the wall there was only a ditch. This would account for all that we see. Extremely ancient, therefore, we cannot consider it; we must look to the Scandinavian times first probably, and to the introduction after that of the more southern institutions, and the court of the Baron.

When examining this court, I was told of another not far off, about midway between Connel and Ledaig. This was also examined by trenching, but nothing was found. Towards the sea, on the north-west, there is

as at the other court, a raised part. It would hold few people certainly, but the circle was small also. I suppose it was a very general thing, if not a rule, for these courts to be in secluded places. Protection was required for the officers. In the story of Burnt Njal, we see why that protection was required. A difference of opinion on an important point in the trial ended in a battle, and the death of about thirty people. Let us imagine a similar dispute to have taken place at the simple peat court on the shore of the small and shallow Loch-a-nan-Ragh on Ledaig Moss, and we can easily finish the quarrel by the death of the Baron, and have him buried under the cairn now called the Baron's Cairn, standing near the Baron's Court. This is, of course, a mere conjecture, but it is one in accordance with a very probable event, as well as the facts of the case as they now stand connected with traditionary names.

However, I judge this cairn to be not from prehistoric times, and, in all probability, from a comparatively modern era. Of course, one may say that the name of the court may have been transferred to the cairn, and if a very great deal depended on the matter, greater care would be required before concluding; but there is at present nothing hanging on the result, and I shall leave it with the belief that the traditionary name is correct until some positive reason, however small, shall be found to throw suspicion upon it. Tradition, we see, has much to boast of in this district, as the retention of ancient names shows.

It has been asked, why the courts were made round? We may also say, why were the circles made, instead of squares, &c.? Is it not a mark of early work? Children always build round at first: it is for want of a definite idea; they hasten to make the lines meet. Dr Livingstone could not prevent his Africans from making round walls. A straight line and an angle are exact ideas of later growth.

*Excavation of the Cairn of Ach-na-Cree.*—I must now describe a very different object, where history and tradition are unable to help us. In my paper of last year, a drawing was given of the large cairn at Ach-na-Cree (Ach-na-Cridhe), at least of the outside (see Plate IX.); since that time fuller details have been found.

Wishing to open the cairn in the wisest way, I requested Dr Stuart to fulfil a previous promise to visit the place, but the time did not suit; meantime I was preparing, and began to open from the top downwards.

It was desired not to disturb the actual top, so as to diminish the height, but it is to be feared that the care has not been sufficient. After the men had worked for seven days, a granite slab was found sixteen inches thick. Under one edge, there was some brittle slaty stone, which was easily removed, when an opening into a chamber was seen. After three more days the boulders of the cairn were taken down in quantity sufficient to render the slope safe enough to allow of an entrance. The great danger in these cases comes from the rolling of stones easily moved by a touch, and falling down to the bottom, so that they require to be lifted up at least as high as the side entrance. As it turned out, the hole under the granite roof was the only entrance that could have been used without endangering the structure. The intended entrance was then sought for. Two stones, that seemed to me to have been portions of a stone circle round the cairn, now showed themselves rather as gateposts, since the chamber seemed to point in that direction. An opening was therefore made between them, and a narrow passage found. This passage was made of brittle slate pieces of about 3 feet in height, and, in many instances, less than a foot broad, forming the sides, and covering the way. These did not seem in good order, as if the weight of the cairn had caused a tendency to collapse. The way was also nearly filled up with stones, put there with intention to make the entrance difficult, as it would seem. When working at this narrow entrance, an old man from the neighbourhood, who had been engaged to assist the others, said that he had found an opening there forty years ago, when removing stones for building. When General Campbell, who was then proprietor, saw this, he prevented further disturbance. There was no entrance made, but the opinion continued that the cairn was hollow. Evidently no one had entered it at that time. There was a story of some bones having been found, but I do not know at what spot; probably in a cist outside the cairn.

The apparent dimensions of the cairn are 75 feet in diameter, and 15 feet high. About a foot is now removed. If the pillar stones made a continuous circle at the same distance from the centre, the diameter would be less. At present the boulders of the cairn pass even that limit. It would be interesting to know if this circle supported the sides of the cairn. I incline to think not. Many of the stones have been removed on the side, so that one might doubt the shape of the original; but I think, from



the remaining part, that the whole was one great circle. On the side farthest from the road is a ditch, forming part of an outer circle of 135 feet in diameter. On the edge of that, again, there are some stones which appeared, when I first saw them, to be the remains of a stone cist rudely built, but so much displaced by the growth of trees, and other still later accidents which have entirely broken a part within a year, that it is not now easy to distinguish the form. We must consider, then, an enclosure about 400 feet in circumference, and within it, probably a dozen feet from it, a circle of standing stones. Of this I can find only one stone remaining; but it is so like a standing stone for the purpose, that it seems to have no other duty. I received this idea from those circles round the cairns at Clava, for example. An embankment is not uncommon; one is seen on a gigantic scale at the Giant's ring, near Belfast, where several acres are enclosed by a high earth wall; in the centre of the circle is a cromlech, with two covering stones, like one of those described at Ach-na-Cree-beag; one has fallen down on one side. Some of the supporting stones have been removed.

The next circle is the cairn itself, which was once no doubt much smoother and more regular than now, even if not supported all round by a wall of standing stones, like those now forming the entrance.

Before entering the cairn, I had the pleasure of a visit from the Rev. R. J. Mapleton of Duntroon, who kindly came with his great experience. This relieved me, as I do think inexperienced persons ought not to venture on touching ancient monuments, and I began with the full hope of finding help. Mr Mapleton has aided me in the description.

Fig. 1, Plate XXIII. gives the size and height according to the measurement of Mr Ritchie Rogers, who kindly undertook to survey the whole, both within and without. From him the originals of the drawings of this cairn have been obtained on a scale, and they are now enlarged to be shown.

[The inner circle shown on the diagram is that of the cairn itself. The dotted line is the original passage, now a good deal obstructed with loose stones, and not passable. The outer circle is that of the fosse. A supposed third circle would be between these two.<sup>1</sup>]

A (fig. 2, Plate XXIII.) is the entrance, as seen from the chamber B, C chamber not marked. The point A is to the S.S.E., and may be called the southern point. In reality, however, we entered at L, where

<sup>1</sup> This diagram is not engraved.

a few of the loose stones at the top of the wall were removed. It was needful to go feet foremost, and to allow ourselves to drop gently to the floor.

[In the diagram shown at the Society's meeting, there was also a view of the side walls of the chamber and passages on the east and west.]

Fig. 2, Plate XXIII. gives plan and elevation of passages. Going from L we first meet passage I next to H, then E and D, with the stones of the wall over them always becoming smaller. We then come to A, where the proper entrance ought to be; these are placed in the plate opposite to their positions.

In a corner of chamber B, is a large boulder, probably put there from its having been ready at hand; at present it forms a part of the wall, although by jutting out it becomes an irregularity.

Having then entered feet foremost at L, the first thing that struck the eye was a row of quartz pebbles, larger than a walnut; these were arranged on the ledge of the lower granite block of the east side, with two on the west. When we looked into the dark chamber from the outside they shone as if illuminated, showing how clean they had remained. They are rounded and not broken. The total length of the chambers is nearly 20 feet, not including the long passage, and it may be said to be tripartite, although the centre part might be held to be merely a passage. The southern part, B, was intended to be entered first, and is the largest, 6 feet long and 4 wide, the height 7 feet, but diminished by an accumulation of 8 or 10 inches of soil. The entrance at A was capped by a large and roundish block of granite resting on two slabs, and leaving the doorway to be only 2 feet 2 inches high and the same wide. On the stones forming the passage no markings could be expected; they were rough and brittle and slaty; no markings could be seen even on the granite, although there were places convenient enough for the purpose. The walls were formed of two blocks rather than slabs of stone, supplemented alone by a rough walling, as seen in fig. 4. The slabs were placed on edge and lying end to end. On both sides where these two blocks met was a kind of triangular space filled in with loose open walling, so that the hand could be inserted between the stones. On thrusting the hand in, the place around seemed to be so open that Mr Mapleton was inclined to think that a recess might be behind. The roof was very interesting,



*Curn of Stones 75 feet diameter  
Stones lying on ground to 135 feet "*

*Scale to Section.*  
1 2 3 4 5 6 7 8 9 10 15 20 feet

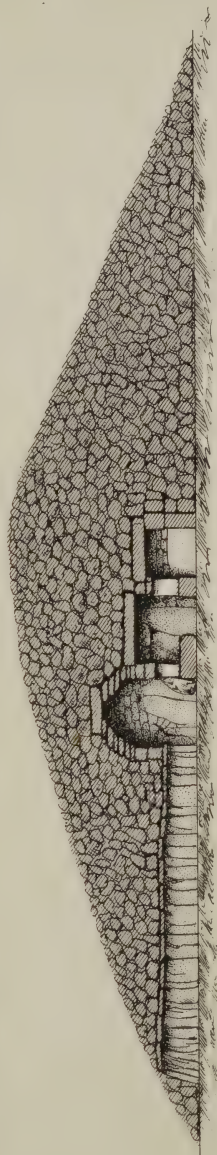


Fig 1. SECTION

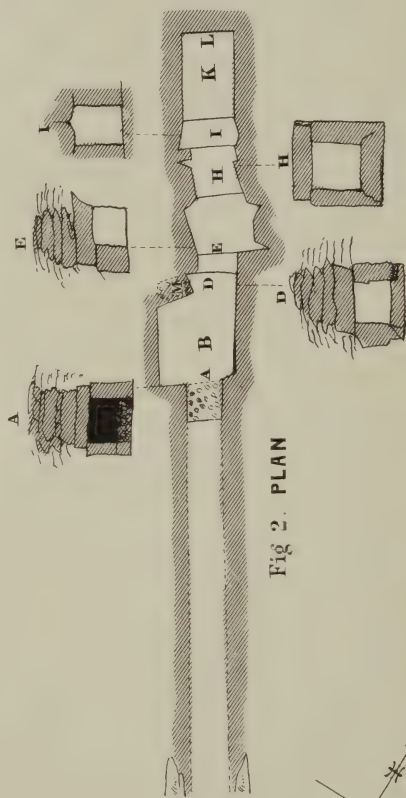


Fig 2. PLAN

*Scale to Plan.*  
1 2 3 4 5 6 7 8 9 10 15 20 feet









Urn from S. Chamber of Cairn Achnacree



Urn from N. Chamber of Cairn Achnacree



CROSS AT CLEINAMACRY

the stones of the rough walling rose from the rocks below, and gradually approached each other, until the space was only 3 feet 4 inches by 1 foot 10 inches. This was covered over by one stone, as depicted. The chamber was therefore roughly domed, in this respect resembling many buildings of later times. The soil was loose to the depth of 10 inches, chiefly fine gravel, with some larger pebbles. When Mr Mapleton lifted it up with a small trowel I passed it through my fingers; after bringing it to the light, many dark specks were found, appearing at first to be charcoal, but on examination they were found very soft, and might have been from decaying vegetable matter. It rained whilst we were in the cairn, and heavy drops came down into the domed room where the centre slab did not cover.

There was nothing found indicating a burial except the urns; in the large chamber was one, or rather part of one. There was no instrument of stone or of metal. We dug down to the natural surface, or some inches lower. However, the urn was not below the natural surface, but on it, and under the looser soil, lying on its side close to the mid part of the eastern wall. The position seems to have been its original one, the parts missing have probably decayed from being less completely burnt. The loose parts came out as if from their proper places, although detached. Another explanation is possible. The form is seen at fig. 1, small neatly raised portions forming incipient handles. The urn is round below, and consequently could not stand by itself. Earth and stones were the only contents. A pebble of the same size and quality as the white ones mentioned was inside, and had become brown like the earth around.

The markings have a neat appearance, although done by simply drawing a point down the side. See Plate XXIV. fig. 1.

The exit from this chamber leading to the middle compartment had two large slabs, supporting the roof or cover on the east side, resting on a wall of small stones, and on the west are the more solid blocks. The walling ran half way across the passage, which became narrowed to about 2 feet. This doorway E, was filled up with stones built firmly in after the chamber had been completed, and not supporting the structure. They had no appearance of having been placed there recently, although they were lighter in colour than those forming the upper part of the wall. Those in the passage had the same light colour, and were still of the

original building. I understand that the apparently premeditated filling up of a passage is not uncommon.

The middle part H, which may be only a passage itself, is 6 feet 6 inches long, and 2 feet 4 inches wide at the south end, and 2 feet 1 inch at the north. It is 5 feet 4 inches high. Both sides were very similar, each formed of two blocks, and above them 3 feet of firm dry walling. A stone was found lying across the compartment nearly hidden in the loose soil. This gave the idea of sub-compartments, such as had been found by Mr Mapleton at Kilmartin, but on examination it was seen to have been placed there only for strength, being large and irregular, and occupying a great part of the floor, although well fitted for keeping the sides from approaching.

The floor of the whole was strewn disorderly with boulder stones, but this I understand is common; to me it suggested entrance and robbing, whilst some careful hand closed all up. This, however, must have itself been early. The cover of this middle compartment was a large slab, the edges of which could not be seen.

The doorway I, into the north division, is 2 feet 9 inches. A long stone lay across, perhaps to tie the two sides, perhaps to support the ends of the covering slabs, or both. We suppose there were two slabs to this and the middle division, but we could not see the junction. This north compartment is 4 feet 6 inches long, 3 feet wide, and 4 feet 8 inches high, if we do not remove the loose soil, otherwise 5 feet 5 inches. This north end is formed by a slab, supplemented as elsewhere by rough walling. The east side was formed of two long slabs set on edge, the upper one resting on the lower. The space above has rough walling 1 foot 6 inches high. The west side was similar, except that the upper slab rather bent down and left a wider ledge. The lower slab was 1 foot 4 inches thick, and 1 foot 9 inches high.

About the middle of the ledge, on the east side, were placed six white pebbles of quartz—four in one part and two a little separate. On the west side were two white pebbles; others of the same kind, but discoloured, were found in the soil. Three pebbles were found in the urn on the east side, and one in the others, so far as the broken state allowed us to judge. One urn nearly entire was found on the west side, and above the ground on the east side were fragments of two which appeared to have crumbled to decay, although the appearance could be explained by their having been broken and parts removed. We may ask, why should people have removed por-



tions? The most complete was found exactly below the greatest number of quartz stones.

Fig. 2, Plate XXIV. shows the best preserved urn ; it accompanied the fragments of two others. All seemed to have been round below, and to have had no feet; two of those in the north certainly, and the one in the south. Those in the north had no handles, not even incipient.

There was no injury done to any part of the structure, unless we except a crack in the tie stone between the north chamber and the passage. This was old, and seems to have been the result of weight only.

The quartz pebbles have been often noticed. Mr Mapleton has found them often in urns and cists ; in one of the latter lately near Lochnell, and, he says, far from quartz. He adds, they are generally associated with cows' teeth. He found three angular pieces firmly imbedded in a deep cup cut out of the rock, and surrounded by rings or circle markings, on the rock in the Kilmartin district lately. These markings were covered over with about 15 inches of soil, in which no quartz occurred. Dr Wilson mentions twenty-five urns having been found in the Cathkin hills, each with its face downwards, and a quartz stone under it. Mr Mapleton inclines to consider a suggestion that the quartz pebbles were signs of acquittal, according to the custom of the Greeks of using white stones, shells, or beans, and refers to the second chapter and 17th verse of Revelation. There certainly we have the word used, *psephos*, a pebble, from which *psephidosmai*, I vote, is taken ; votes were put into urns, and in Rome into cists. In Egypt stone tablets were put with the dead, but these were written on. We know that the Egyptians measured out the good deeds of the person who died. These ideas are interesting to keep in mind, but absolute proof we have not. We might, indeed, say that quartz pebbles, from their remarkable whiteness, are selected as beautiful objects out of the brown material generally forming the rocks or soil. Children are very fond of collecting them, and most families at the sea-shore have some. They are even seen in rows on window sills, and along garden walks, and at rockeries. The same idea of beauty might take hold of the national mind of an early age ; this would explain to us why they are seen in so many positions, whether in Asia or with us. They often are found forming smaller circles within the stone circles and elsewhere. Still this does not contradict the idea of their being symbols, it may even assist it.

The ideas of childhood often become sacred in age. Perhaps the pebbles connect themselves with Greek and Egyptian customs. It is sometimes pleasant as well as useful to put together far-fetched ideas, and so I mention the Egyptian mode of burial described by Sir G. Wilkinson, where four urns were used. "The vase or urn, with a cover representing the human head of Amset, held the stomach and large intestines; that with the cynocephalus head of Hapi contained the small intestines; that belonging to the jackal-headed Smautf had the heart and lungs; and in the vase of the hawk-headed Kebhnsnof were the gall-bladder and the liver." If the intestines were put into the body again, the images of these four gods of Amenti were put beside them. It is in analogy with some other symbols if a quartz stone were to represent a divinity.<sup>1</sup>

Dr Wilson, when speaking of cairns, mentions Ledaig or Connel Moss, under the name of "the black moss," as containing many such heaps. But none there are so large as this now described. The others were externally of the same appearance as their ruins testify; but although large in circumference they do not seem to have been so carefully built, or to have had chambers. Perhaps they have not been sufficiently observed before ruin. The Baron's Cairn is one of the smallest, although it has a name, perhaps because latest. This of Achnacree has the name of Ossian's Cairn. I have not intended to keep that name, but it is necessary to record it. The reason for not using it is simply that there are so many claiming to be Ossian's.

This cairn might appear to belong to the neolithic or later stone age. Authorities, to whom I showed the drawings, agreed in this. Still we have obtained no implements, and this leaves a certain doubt behind how far the plan of building thrust itself forward into other ages in these remote places.

*Lake Dwelling.*—I shall now move back to the lake dwelling mentioned last year. It was my wish to examine it more fully, and accordingly I began a trench to follow the beams or trees which make the foundation. This led to a distance of 30 feet from the centre on the Ledaig Hill side, making the breadth 60 feet, although at the outer part

<sup>1</sup> In "Mysore," by Robert H. Elliott, vol. i. p. 62, it is said, "the only sign that denotes a demon-worshipping spot consists of three small stones, generally of white quartz."

the wood was not so plentifully used. At one spot was found a good deal of sand, about a foot broad, and a great many small branches. It pointed to the existence of an outer enclosure or yard. This, however, must be followed up. It will require a good deal of time, and I was able only to give a fortnight of the summer of last year. The size grew more important than expected, and the promise of some decisive objects increased. A large amount of nutshells were found, as if thrown into the yard in a slovenly way. A second fire-place was also found at the side of the door of the inner dwelling and within the yard. Several wooden pegs, and a piece of a knife not longer than a large pocket knife blade, a hook (such as might have been used for a pot, scarcely for fishing), several pieces of skin soles, and a slipper of thin skin, rather neatly made. Besides these, there was a part of a rim of a wooden basin well turned. These things do not point to a great distance of time, as already said, at least in this country, but I judge of the time more by the name of the place than the mode of building or the few objects hitherto found there.

*Loch Nell.*—Leaving this northern part of Lorn, and going to the southern side of Loch Etive, we come to Loch Nell, the Lake of Swans, as it is said to be, suggesting a spot either less inhabited than now, and therefore harbouring these birds quite wild, or what is also possible, a spot more inhabited where swans were admired and fed. But some one will laugh at wild Celts feeding swans and using Loch Nell like an ornamental pond. For this we have authority enough for the moment in “The Fate of the Children of Lin,” who were turned into swans, and fed as such, and swam for 300 years on the Loch of Derryvaragh, and for 300 years cold and wretched on the Mull of Cantire, &c., a romance wild enough certainly, but apparently old. The gathering of swans and enjoying their music are mentioned, showing that, whether true or not, the idea of beauty and music and swans were connected. The age of the story is not known, but although the MS. is not 200 years old, Professor O’Curry says, that he believes the tale to be old from the language.

This year, I went a little farther than last, and entered Glen Lonnen. Going through a very narrow pass we come to Cladh na MacRigh, pronounced Cleinamacry, which is called the burying-place of the king’s sons. The first object that calls our attention is on the roadside to the left

opposite the farm house of Cleinamacy. This is a mound with a small stone and a cross on each side cut into the stone. Under the cross on one side is a floral ornament in relief resting on a lengthened object. This is a good deal worn, whilst the crosses are sharply defined. These are seen at figs. 3 and 4, Plate XXIV. The mound seems to be partly natural and partly artificial, and is called simply *Cnoc na croise*, knowe of the cross. The mound and the cross suggest a semi-christian burial ; but the latter, as I am told, may be of the fourteenth century, or later.

Up a little farther are several mounds. One is called *Cnoc an t' sagairt*, or knoll of the priest ; another *Cnoc ant-sheomar*, or knoll of the chamber. These may be worth attention.

Farther south, and to the west of the road, is an elongated rectangular enclosure, very much decayed, and with signs of a circular mound round it 60 feet in diameter, but very low. This has an entrance at the easterly side. About half remains, and is about 30 feet long and 10 wide. I suppose this departure from the round form indicates a certain advance. There is no apparent reason for the circle in the case of an interment. This glen has a character different from the closely adjoining Loch Nell Valley, in thus presenting an elongated form. There seems to be a mixture of the old heathen and the Christian prehistoric customs. This is the true Cleinamacy, said by the people to be the place where infant children from Dunstaffnage Castle were buried.

Going up to the first turn of the valley we come to an isolated and steep height, standing almost like a ruined tower in the valley. On one side it is not perhaps more than 100 feet high, but towards the river more (having had my pocket aneroid stolen in a crowded hotel, I could not measure). This hill is simply called the Dun. Above, we see many loose stones, which no doubt formed a wall. It is said to have a fort in view on both sides, making one of a line. See fig. 9.

All this valley is lighted up with names of romance. The remarks on these are reserved for another paper, as additional names have since writing this been found.

I again call to mind that I am not a Celtic scholar, but I seek good advice for the few words written in Gaelic.

I have deliberately spelt the name of the fort in various ways, for reasons which may appear in a later paper.



## II.

NOTICE OF HIMALAYAN AND KABYLE BROOCHES, AND THE  
MODE OF WEARING THEM. BY WILLIAM SIMPSON, ESQ., LINCOLN'S  
INN FIELDS, LONDON. (SPECIMENS OF THE BROOCHES WERE EXHIBITED.)  
(PLATE XXV.)

In the Loan Exhibition of 1862 at South Kensington, I saw one of these Himalayan brooches among a number of old Irish ones. No doubt but it had fallen into the hands of some person, who naturally came to the conclusion that it was only a variety of the ancient brooches of this country. Certainly there is a very strong resemblance, sufficient to explain why the mistake was made, and sufficient at the same time also to demand that some comparison should be made between the Celtic and Himalayan specimens.

To many, the similarity of these brooches will be only another link connecting the Aryan and the Celt, but the probability is, that it is rather an evidence that similar conditions produce similar results—the similarity of condition in this case being, that the dress is composed of a piece of thick and heavy woollen cloth requiring a strong means of fastening it on the person. In the plains of India, where the great heat demands slighter garments, where cotton and muslins are the fabrics, no brooches are used, not even a bodkin, a simple process of tucking in is all that is necessary both with men and women. In a hill country the case is different; there is not only the rough climbing, but the cold climate necessitates wool, and that fabric cannot be fixed with tucks.

The Kabyles of Algeria, who wear woollen garments, are said to use brooches identical with the Celtic ones. The Kabyles are an ancient race, true Highlanders on the slopes of Mount Atlas.

In that part of the Himalayas where these brooches are worn the primitive character of the people is evidenced by their customs, and by the relics of very ancient religious rites still performed among them. The principal house of each village is the temple, where resides a god, *Khuda*, which is carried on staves, and bears a wonderful resemblance to the ark of the covenant. To this deity they sacrifice kids, and offer blood, and the first fruits of the land. There is no Brah-

minical caste, only the owners of the land and coolies, the latter are bound to labour, and have a right of food and clothing in return. Polyandria is the custom,—that is, when the elder brother of a family marries, the woman becomes the wife of all the other brothers. This is all most ancient, but there are fragments of even greater antiquity said to be about this spot, and if one could credit what is said, even a glimmer of the golden age must be believed to linger in this out-of-the-way corner of the world; for I was told they had no priests, no lawyers, no doctors; nobody stole, nobody told lies; and as there were no thieves, there was no need of prisons or police. This happy spot is called Bussahir, and is about 100 miles north-east from Simla. It is on the Sutlej, where that river passes the higher ranges of the mountains.

The men wear a made dress of coat and trousers, so that the brooches are the peculiar characteristic of the women. Their dress is formed of one piece of thick woollen cloth, goat's hair, about 4 yards long by rather more than  $1\frac{1}{2}$  yard wide. It is generally striped; white, with three black stripes and one red being a favourite pattern. As this piece of cloth is put on to form the skirt of what seems a gown or petticoat, and is wrapped round so as to fully cover the body, it suggests a very strong resemblance to the old manner in which the Highlander formed his kilt and plaid all out of one piece—the belted plaid—and this I should say seems a much more suggestive point of resemblance than the form and construction of the brooches. In putting it on, the width of the cloth is what may be called the length of the skirt, that is from under the armpit to the feet. The end of the cloth is brought over the left shoulder, where it hangs down to nearly the waist, the only attempt at ornament being a simple border and a fringe. The rest of the cloth passes round the body, under the right armpit, leaving the right arm and shoulder bare. As with the Highlander this leaves the right arm free in its action. Some (few only) wear a jacket with sleeves under this. The cloth is then passed round, keeping the upper edge high so as to cover the bosom. The end hanging from the left shoulder is placed over this, and the brooch is here inserted to hold the dress together. The brooch is really the key-stone of the whole costume. The rest of the cloth is then plaited into folds; a kummerbund or waist-band is placed under the middle of these plaits, and they are passed round behind, and are held in that position by the tying of the waist-



a woman of  
Bussahini  
on the Satlej.  
Himalays.  
W.S. 1873.





band. As about one-half of the cloth is put into these plaits, it makes a most picturesque mass which hangs gracefully behind. These women generally wear silver bracelets, and necklaces and ear-rings of the same. A large chignon of bright red wool is the proper thing in this part of the world, and a jaunty hat, much like the pork-pie hat of a late date at home here, and generally a flower is stuck into the hat or the hair, the whole forming about as elegant and picturesque a dress as can be found in any part of the world.

The large brooch consists of two circular portions connected by an arch or bridge, and is suggestive of the shape of a spring eye-glass, it measures  $8\frac{1}{2}$  inches across; they are not uncommon, but the usual size is the one about  $3\frac{1}{2}$  or 4 inches. It will be noticed that the workmanship is very rough, and that the ornament is not in the least like that of the Celtic; still it is a good pattern, and the effect is such that it could not fail to attract the eye of an artist. The brooches are almost all made to the one design; the smaller of the three is different in detail, but it is quite exceptional. A bodkin attached with a chain is common; it is used for the end of the plaits, which are at times brought round and pinned before.

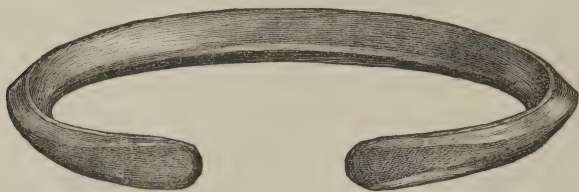
The sketch, as exhibited, will help to make the description clear.

The native name of the brooch is *bamnoo*, and they are made in the locality. The making of a complete dress to cover the person from one piece of cloth is not peculiar to the hills in India. The most of the women in the plains do the same. It is done with a long piece of cloth called a *garee*, but it is not put on in the same way as the *dohroo*, or dress of the hills. No brooch or pins are used. It is held on merely by tucks and plaits, and it is in many cases so ample that it covers the head as well, doing duty for the *chudder* or veil.

## III.

NOTICE OF THE DISCOVERY OF EIGHT SILVER RINGS OR ANCIENT WRIST OR ANKLE RINGS, IN CISTS NEAR RATTAR, DUNNET, CAITHNESS. BY MR ROBERT CAMPBELL, OF THE PAROCHIAL SCHOOL, DUNNET.

An idea of the form of these rings may be conveyed by supposing a square bar of silver, about  $\frac{1}{4}$  inch on the side, cut in lengths of  $7\frac{1}{2}$  inches, and weighing about two ounces, to be bent, not on the flat, but on the angle, till the two extremities, which are a little flattened and rounded, approach within little more than an inch of each other. They are nearly the same size, weight, and shape, and they have no ornamental markings. One of them is shown, of the full size, in the accompanying woodcut.



Silver Armlet (one of seven) found in a Cist at Burn of Rattar, Caithness.

The locality in which they were discovered is situated immediately above the sea beach, about 100 yards to the east of the Burn of Rattar, at an ancient ruin, on a green level plat, projecting to the sea in a semi-circular form, and elevated a few feet above high water, from which a sloping ridge of slaty rock runs out a considerable distance. The ruin is locally known by the term "Kirk o' Banks," and the rocky ledge as the "Kirk o' Taing." There are other ancient remains on this green. The four walls of an oblong rectangular building of undressed and uncemented stone on the extreme north-east of the above plat are distinctly visible, though mostly grown over with grass, and an elevated heap across the enclosed area gives it the appearance of having been divided into two unequal apartments. About sixty years ago the walls stood some 6 or 7 feet high. The building, which stands east and west,

was 36 feet long by 15 feet wide outside. Around this, the foundation of a rude stone wall or dyke, enclosing a nearly square area, which lies more to the south than the other three sides, is also distinctly traceable all round. A drain, about 18 inches wide and the same in depth, the sides sloping to a few inches at the bottom, was being cut nearly parallel to the wall of the chapel, and led to the discovery of the rings.

The soil consists of a darkish sandy mould mixed with sea and land shells, and abounding with broken slaty stones, as if they were the rubbish of a building, and of the same nature as the adjacent rock. Any larger stones occurring were mostly rotten, and crumbled into fragments by a stroke of the pick. On either side of the drain, the edges of stones of a larger and stronger kind, set vertically in the ground, appear above the grass in several places. These have not been touched. The tract along this drain has long been used as a cart road, leading to the beach for sea-weed, and the soil may have been much abraded in consequence, but it is still about the general level of the green. Traces of human bones were frequently met with in the course of this excavation.

In cutting the drain, the workmen came upon several pieces of slaty stones, some on edge and others flat, about a foot below the surface, with traces of bones, that crumbled into dust, in casting out which they observed one of these rings, which they mistook for a coffin handle, and threw it aside. There was no trace of an urn or anything enclosing it, nor empty space. The ring found alone differs from the others in having a wider opening and appearing rather larger.

They came upon several larger stones, some of them arranged as the sides of a cist, but the space within was a jumble of small stones, earth, &c. A slab some 2 feet by  $1\frac{1}{2}$  feet covered the whole, the top of which was some 6 inches below the surface of the ground. On striking the pick in among the small stones after the slab was removed, seven rings came up, one being broken by the force of the stroke. This made the men examine them more closely, and without paying much attention to the evident traces of bones, &c., or disposition of the remains, the whole was shovelled out. The rings were shown to some neighbours, by whom I was informed of the circumstance, and a blacksmith by melting a small portion of the broken one made out that they were pure silver. Immediately on being informed, I communicated with the men and secured

the safety of the relics, by informing Mr Brims, the fiscal at Thurso, who took possession of them for the Crown. (Five of the rings have been deposited in the Society's Museum by the Queen's Remembrancer.)

The ruin is generally spoken of as an ancient church and churchyard. There is a man nearly 105 years old in the neighbourhood, formerly a farm servant at Rattar, still possessing all his faculties, who remembers several interments being made in the place, but not in this part of the enclosure—in particular, the crew of a boat who were lost on the coast; and as at that time unchristened infants were not admitted to the parish churchyard, they were frequently buried here and at several other old church foundations through the parish. A number of other old people confirm this statement; several such graves are shown marked by rough flat stones from the beach. It is, however, particularly to be observed, that no modern interment is known to have been made at the *back* of the ruin, where the rings were found, there being a decided dislike to burying behind a church in the place; even in the parish churchyard none will bury at the back or north side of the church, while, strange to say, all the cist graves appear to be on the north side. This disposition I particularly noticed at the chambered cairn or mound of "Hattle," at Castlehill also.

Since writing the foregoing, I am informed by several parties that they remember seeing the walls about 5 feet high, that the place was reputed to be an ancient chapel, and that it was divided into two unequal apartments by a middle wall. The door was very low.

If I might venture an opinion of the nature and origin of this and similar structures on the Caithness and Sutherland coast, of which there were seven in Dunnet and seven or eight in Canisbay, I should be inclined to connect them with the first introduction of Christianity into the north by the missionaries of St Columba. "Kilcomb," or St Columba's Church, on "Island Comb," or "Island Naoimh" (pronounced Naeevé), Saints' Island, as it is called by the natives, at Skerray, in the parish of Tongue, is the same kind of structure.

*Other Ancient Remains in the Neighbourhood.*—About a furlong to the east of "Kirk o' Banks, where the coast consists of precipitous rocks cut into deep "goes or creeks," on the top of a peninsular rock, between two of these "goes," there is a remarkable mound called the "Hillock of Hangy Goe," about 40 feet diameter, covering the whole area of the



summit, to all appearance the remains of a brough, with a visible entrance over the western edge of the precipice.

All round the outside of the mound the edges of the stones appear as of a rude wall tapering inwards, overlaid with earth and generally covered with grass. On the land side it is low and hollow, as if the soil and wall at that side had been removed, and the roof fallen in. Nearer the land several large slabs set vertically in the ground appear a few inches above the turf.

A detached stack-like rock stands about fifty paces nearer the sea, which surrounds it at high water, of the same height as the shore, the perpendicular and precipitous sides of which can only be scaled at one point. The soil on the top has been scooped out in the middle into two basin-like hollows, with a high sloping rim all round the outer edges. This rock is called the "Castle Foot."

About 100 yards to the west of "Kirk o' Banks," close to the "Burn of Rattar," there is what appears to have been a brough or extensive cairn, the soil and stones of which have been mostly removed.

Still farther west along the shore, but farther removed from the sea, in a field called the "Cairns Park," there are, within a few yards of each other, three mounds of the same ancient type. One of these, when viewed from the east, is shaped like an inverted boat. It lies north and south, and is some 30 paces long. It has a flatter and more irregular appearance from the other side, which is to the rising ground. Large stones on edge appear in several places, and some blocks lying flat, where the soil has been partly removed. A few paces westward, a smaller and conical mound stands, showing some rude building, as of an internal chamber, where the sheep and cattle have rubbed away the soil.

About 100 yards to the west of this the remains of a brough are seen. A great part of the soil and stones have been removed, but the entrance, formed of large slabs, part of a rude stair in the wall, and the general outline, can still be traced. What is most remarkable about all these structures, is the number of large stones set on edge. The adjacent shore supplied these in abundance, and of any size and shape wanted. Similar remains exist at Ham, in the links of Dunnet, at Castlehill, Thurdistoft, and Reaster, at Murkle, Sibmister, Hill of Odrig, and in fact all over Caithness.

Should the present accidental discovery turn the attention of men of science to the investigation in a more systematic manner, of the extensive materials for antiquarian research abounding in this county, it will fully answer the purpose of the writer.

Mr Anderson added the following remarks on this communication :—

The Kirk o' Banks, in connection with which these silver relics were found, appears, from Mr Campbell's description of its ruins, to be of considerable antiquity. The smallness of its size, 36 feet by 15 feet, its being built with undressed and uncemented stones, and its having no traditional dedication, are all indications of antiquity. On the other hand, the fact of its having a nave and chancel forbid the supposition of its belonging to the very earliest period of ecclesiastical buildings in Scotland. The oldest chapel known in Caithness with nave and chancel is that at Lybster, in Reay, of which Mr Muir says: "The diversified shapes and sizes of the stones, and the primitive form and smallness of the entrances to the nave and chancel, would suggest extreme earliness of date; whilst, on the other hand, the refined character of the ground-plan would indicate a period not more remote than the twelfth century." Judging from the sketch given by Mr Campbell, the ground-plan of Kirk o' Banks is more primitive and less refined than that of Lybster.

Some indication of the probable date of this deposit may, however, be found in the rings themselves. They agree in form, size, and weight with those found in the great hoard discovered on the opposite side of the Pentland Firth, at Skaill in Orkney, in 1858, which has been supposed to be referred to in one of the Runic inscriptions of Maeshowe as "a great treasure buried out north-west." That hoard is dated by the Cufic coins which formed part of the treasure. It is evident that it could not have been deposited earlier than the date of the latest coin, which is one struck at Bagdad in the year 945.

It is recorded in the Saga of King Hakon Hakonson, that when he passed southwards on his way to Largs, in the year 1263, he levied a tribute of rings from Caithness. The Saga says: "He sent men over to Caithness to bring contributions; the Caithnessians submitted to the tax, and King Haco appointed collectors to receive it." There is then in-

corporated in the narrative a stanza of one of the Skaldic songs, which represents the king as imposing tribute,—“the ransom of their lives on the dwellers of the Ness,” and adds that “all its tribes were terrified by the steel-clad exactor of rings.” In another strophe given in the same Saga, the conquered Scots are described as “the forlorn wearers of rings,” and they are spoken of as “hand-rings,” so that it may be inferred that such ornaments were not out of use so late as the middle of the thirteenth century.

The fact of these rings being found in cists points to one of two conclusions, either that they were buried with the occupants of the cists, or placed there subsequently for concealment, the grave-ground being selected for better security. The cists appear from Mr Campbell's description to have been short ones, but we do not yet know when burial in short cists ceased.

It is related in the 15th chapter of the “Orkneyinga Saga,” that a bloody sea-fight took place in the year 1046, off this part of the Caithness coast, when Earl Thorfinn, who then lived at Gills, within sight of Kirk o' Banks, opposed the landing of his nephew, Ronald Brusison, who came from Orkney to invade Caithness, with thirty ships. Thorfinn had sixty ships, but they were much smaller, and after a long and bloody fight he was obliged to draw to land. Before he resumed the battle, in which he was ultimately successful, the Saga states, that besides his wounded he landed seventy corpses, which would of course be buried there. The locality of the fight is said, in the Saga, to have been off Raudabiorg, which can only mean Red Headland or Red Borg. It is only in the neighbourhood of Dunnet Head that the red beds of the Old Red Sandstone appear, and it is also in this immediate neighbourhood that we find the only modern name answering to Raudabiorg, viz., Rattar Borg, now marked on the maps as Brough of Rattar. Here or hereabout, then, we must look for the burying-place of those who fell in the fight of Raudabiorg. Thorfinn and his men were Christians, and if the Kirk o' Banks were then in existence the probability is that the dead would be buried in its consecrated ground. This, however, is merely conjectural, and must be taken for what it is worth.

The boat-like mound mentioned by Mr Campbell must either be one of the long cairns of which we have several curious examples in other

parts of Caithness, or it must be one of the singular Norse burial-mounds, called ship-graves, no well-authenticated instance of which has yet been found, or at least recorded, in Scotland, though they occur in great numbers in Norway, and may be said to be peculiar to the Viking period of Norwegian history.

The hillock of Haugy Goe seems from the description to be one of the chambered cairns, divided into compartments by upright slabs, which are so common in Caithness. The Norse name applied to the goe or creek, "Haugy Goe," or the creek of the Haug or Burial Cairn, appears to indicate that the cairn is pre-Norse, and that the creek was named from its cairn being already a conspicuous land-mark when the Norsemen began to frequent the Pentland Firth.

#### IV.

NOTICE OF BRONZE CELTS OR AXE HEADS, WHICH HAVE APPARENTLY BEEN TINNED; ALSO OF BRONZE WEAPONS AND ARM-LETS, FOUND ALONG WITH PORTIONS OF METALLIC TIN NEAR ELGIN IN 1868. BY JOHN ALEXANDER SMITH, M.D., V.P.S.A. SCOT. WITH CHEMICAL ANALYSIS, BY DR STEVENSON MACADAM, LECTURER ON CHEMISTRY, &c.

In June 1862 I called the attention of the Fellows of the Society to the fact that the Romans were acquainted with the art of tinning metals, as shown in a bronze patella found in Roxburghshire, which I had the pleasure of presenting to the Museum of the Society, and an account of which is published in vol. iv. of our Proceedings. Dr Stevenson Macadam analysed for me the coating of white metal lining the interior of the vessel, and found it to consist of nearly equal parts of tin and lead. There has since (in March 1865) been presented to the Museum by Sir William Maxwell of Monreath, Bart., another example of a Roman bronze patella of large size, and in better preservation, also showing a distinct coating of a white metal or tin on its interior. Both of these bronze vessels had apparently been finished on the lathe after being tinned, the regular markings of the tool being distinctly visible.



This patella was found, with bronze vessels and other relics of antiquity, in exploring a crannog, or artificial island, in Dowalton Loch, Wigtownshire. It is figured along with some of these vessels in Plate X. vol. vi. of the *Proceedings*, p. 109, where the articles are described. None of the bronze vessels, however, except the patella, showed any traces of having been tinned.

It would appear, however, not improbable that the art of tinning metals was known and used at perhaps an earlier period; at least if we may judge from the class of weapons which I have now to describe. They belong to what has been supposed by some antiquaries, to be one of the earliest forms of metal weapons made by man, the simple wedge-shaped axe-head or celt, the form of which is believed to have been copied from the wedge-shaped axe-head or celt of stone, belonging, as has been fancied, to a still earlier time.

Mr Joseph Anderson, the Keeper of our Museum, when looking over and re-arranging the various articles in the Museum last autumn, was attracted by the peculiar appearance and smooth surface of one of the bronze celts, and to it he directed my attention. On examining the celt, it was evident that its flat and broad surfaces were covered over with a whitish-coloured metal coating, seen distinctly enough through the dark colour which now covers the surface to a considerable extent. The coating was metallic in its appearance, and was unlike any variety of bronze patina with which I was acquainted; and the celt being broken across the upper part into two pieces, the outer surface was seen to form apparently a distinct metallic coating over the surface of the celt. We came then to the conclusion that the celt was in all probability not simply covered with a coating of patina on its surface due to atmospheric or other causes, but had possibly been either plated or tinned artificially.

Accordingly, I placed the celt in the hands of Dr Stevenson Macadam for a chemical analysis of its outer coating, and made inquiries at the same time as to the probability of a bronze weapon, formed, of course, of copper and a small proportion of tin, when weathered, throwing up a patina of nearly tin alone. Shortly after, I was favoured with the following notes of his investigations:—

“ On removing a portion of the surface of the bronze axe-head, and subjecting it to chemical analysis, I obtained the following results :—

Tin, . . . . .	35·84
Copper, . . . . .	64·16
	<hr/>
	100·00

“ In taking off the coating from the axe-head, I was compelled to remove some of the bronze itself, and hence the origin of the copper. It is apparent, therefore, that the tin is in much larger proportion than in modern or ancient bronze, and such may be accounted for by the axe-head having been purposely tinned. It is, however, possible that the weathering of a bronze implement might rust and remove part of the copper, and thus leave the tin in excess, but my belief is that the tinning is the more probable cause of the peculiar appearance; and, therefore, that the celt, after being fashioned, has been subjected to the process of tinning. The coating on the surface of the celt contains no silver.

STEVENSON MACADAM.”

“ANALYTICAL LABORATORY, SURGEONS’ HALL.”

The celt, we may therefore assume, was in all probability tinned, to protect it from the influence of the weather, and keep its surface clean, and free from the oxidation of the metal.

This bronze celt was one of seven found on the hill of Fortrie of Balnoon, parish of Inverkeithney, Banffshire; it is formed of a bright yellow bronze, and measures five and three-quarter inches in length, by three and a quarter inches of greatest breadth across its face.

On looking carefully over the other bronze axe-heads in the Museum, to see if there were any more showing traces of this coating of tin, another was discovered which in this respect seemed to correspond with the one now described. This bronze celt was larger in size, measuring  $6\frac{3}{4}$  inches long, by  $3\frac{1}{2}$  inches in greatest breadth, and was of a rather dark colour, with traces of a whitish metallic appearance on its flat and smooth surfaces; the thin edges had been pared, apparently to test the metal of which it was composed, and here the white metallic coating was absent. This bronze celt was presented to the Museum of the Society

as long ago as October 1784, by Alexander Keith, Esq. of Ravelston, and is described in the list of the donations to the Museum, published in the "*Archæologia Scotica*," vol. iii. p. 32, as:—

"An ancient instrument of a metal resembling gold, in shape like the head of a hatchet, seven inches in length, three and a quarter inches broad at one end, and one inch and a quarter at the other. Found about a foot under ground in the south-east end of the Western Hill of Ravelston."



Bronze Axe-Head or Celt found at Sluie, Morayshire ( $5\frac{1}{4}$  inches in length).

Ravelston Hill, I may remind you, forms part of Corstorphine Hill, closely adjoining the city of Edinburgh. The gold-like appearance, as it is described, of the rich yellow bronze, of which the celt is composed, discovered by cutting the surface, explains its bearing marks of having been cut or pared along its thin edges. The tin coating, however, still covers nearly the whole of the flat and smooth surfaces of the rest of the axe-head.

There are also in the Museum two other celts or axe-heads of a some-

what similar character and appearance. They were found at Sluie, on the river Findhorn, in the parish of Edenkille, Morayshire, along with a broad dagger of bronze, which measures 11 inches in length, and  $3\frac{1}{2}$  inches broad at the rounded base; which is pierced with four large rivet holes for the purpose of attaching it to a handle.<sup>1</sup> These weapons were presented to the Museum by Sir John Dick Lauder, Bart. in 1861. (See the annexed woodcut of one of them, which shews the general style and shape of these bronze axe-heads.)

Dr Stevenson Macadam was asked to analyse the coating on these celts also, so as to compare them with the first one, which perhaps, though now imperfect, shows most distinctly the coating of white metal on its surface. Dr Macadam has accordingly kindly furnished me with the following analyses and notes:—

“I have analysed the surface coatings of the bronze axe-heads from Ravelston Hill, Mid-Lothian, and Sluie, Morayshire, and find them to consist of much tin, with some metallic copper, and a large percentage of carbonate and hydrate of copper. The analytical results were as follows:—

	Ravelston Hill.	Sluie.	
Tin, . . . . .	37·26	24·36	32·78
Copper, . . . . .	10·23	15·49	18·14
Carbonate and Hydrate of Copper,	52·51	60·15	49·08
	<hr/> 100·00	<hr/> 100·00	<hr/> 100·00

These bronze axe-heads have apparently been subjected for a lengthened period of time to the weathering action of moisture and air, and hence the rusting away of the copper as the hydrated carbonate. Considering the large proportion of the copper rust, it is possible that the high percentage of tin may be partly due to the gradual rusting away of the copper of the bronze, which would leave an excess of tin on the surface, though I am inclined to think that the axe-heads have been purposely tinned. I may state that the coating on these bronze axe-heads was much softer than that on the axe-head examined by me previously.

“STEVENSON MACADAM.”

<sup>1</sup> Proc. vol. iv. p. 187, 1863.



The notes of Dr Stevenson Macadam on these last analyses seem to give more importance to my previous inquiry as to the possibility of the copper weathering more rapidly than the tin, and leaving the latter in excess over the surface of the bronze. I would, however, be inclined to ask the chemists if a patina formed on bronze by the weathering away of the copper would show the tin as a uniform white coating over the surface of the metal, and not rather as scattered patches, or as a granular-like instead of a uniform smooth and polished surface. On this point I desire more information.

The apparent rarity of this white metallic coating on bronzes, appears to me, to amount almost to a proof in favour of these few examples having been really tinned. In this way their white metallic appearance is certainly most easily accounted for.

I have not been able to find any instance on record of an ancient bronze axe-head covered with a coating of tin, so I suppose these may be the first that have been observed and recorded, although it is not improbable that examples of a similar kind have been simply overlooked.

In the eighth volume of the "Archæological Journal," 1851, under the Notices of Archæological Publications, at p. 112, a figure is given of an ancient bronze dagger-blade, found along with a bronze celt at Bracklesham Bay, near Selsey, on the coast of Sussex, which is described as measuring "7½ inches in length, and it is coated with a *black* patina of tin." The blade and the celt were found "in a bed noted amongst geologists as containing abundance of a large bivalve shell in a fossil state."

This dagger-blade may have been possibly coated with tin at the first, and by weathering or staining, it had become partially changed to this dark coloured surface.

Another instance of a bronze dagger, which appears to have been silver-plated, or perhaps tinned, is incidentally described in the "Vestiges of the Antiquities of Derbyshire," by Thomas Bateman, London, 1848. From the rarity of the occurrence of such a weapon, and the interesting character of the circumstances of its discovery, I think it best to quote the detailed account which is given there of the opening of the barrow in Derbyshire, in which it was found, on the 15th August 1846. The barrow was upwards of 20 yards in diameter, and surrounded by a circle of very large stones. In the centre was an erection of large stones, in

which were found pieces of an unusually coarse urn, some calcined human bones, and numerous rat bones. Under the large stone, which formed the base of the structure, was a cist sunk below the natural soil; it was walled round with flat stones, and had for its floor a level surface of natural rock :—

“In this grave was a skeleton of large dimensions, lying on its left side, in a contracted posture; behind the head was a brass dagger of the usual type, measuring six inches and a quarter in length, and in the highest preservation; it has the appearance of having been silvered, and still retains a brilliant polish; when deposited it had been inclosed in a wooden sheath, the remains of which were very perceptible at the time of its discovery. Near it were two instruments of flint, and two more were found during the progress of the examination of the tumulus.”—P. 90.

Mr Bateman uses the word brass occasionally for bronze, and figures, in some instances, the usual short broad-bladed and tapering bronze dagger with large rivets to attach it to a handle; the one described being probably of a similar kind. The whole character of the tumulus and its contents bespeak a great antiquity; so that we have here apparently an instance of a plated or tinned weapon occurring along with an early British interment.

Sir W. R. Wilde, in his valuable “Descriptive Catalogue of the Antiquities of Animal Materials and Bronze in the Museum of the Royal Irish Academy,” Dublin 1861, states at p. 395, that—

“Several of the best preserved and most highly decorated celts in the collection are covered with a patina, or thin layer, or what would appear at first sight to be a lacquer or varnish, like that applied over modern brass, to protect it from the oxidising effects of the atmosphere. It would be interesting to find that our ancient metallurgists adopted means for defending the surface from oxidation.” In a foot note he adds—“On a celt which I submitted to Dr Aldridge some years ago, he found the patina or varnish to be of a vegetable nature, resembling a gum resin. This organic matter may, however, have been derived from the locality where the article lay.” It is evident, therefore, that Sir W. Wilde had not observed any appearance of tinning on ancient bronzes, and I am glad to be able to bring forward these instances of ancient bronze celts, showing at least the probability that their surfaces had been, as indeed they

still are to a certain extent, protected from oxidation, shall I say, by the important metallurgic art of tinning.

*Discovery of Bronze Weapons, &c., with portions of Metallic Tin, found in Morayshire.*—I have now to refer to a discovery of much interest, where small portions of bars apparently of metallic tin were found along with various bronze weapons and armlets, in Morayshire in 1868. These articles have now been deposited by the Queen's Remembrancer in our National Museum of Antiquities. As a notice of their discovery was published at the time in the local papers by the Rev. Dr George Gordon, of Birnie, I applied to him, and he has kindly furnished me with the following details :—

“The bronzes and bits of tin were discovered about April 1868, by — Sime, while ploughing a mossy field on the south side of the farm of Achtertyre, which is about half way between the manse of Birnie and the Priory of Pluscardin. The moss, or part of the present farm of Wester



Portions of Metallic Tin found at Achtertyre, Morayshire (actual size).

Achtertyre, in which the articles were found, is called “Tammiroo.” The find consisted of—

- 1 Bronze celt with socket and loop ;
- 2 „ spear heads, one plain the other ribbed ;
- 2 „ entire rings ;
- Several broken ditto, probably forming part of 4 ;
- 4 Broken bits of tin.

“Some time after I heard of the discovery, I went to the spot with the farmer, and was told that it had been thoroughly searched, by digging with the spade for some yards round it, but that nothing else was seen. There was neither a cairn nor collection of earth—to raise the place above the level of the field, which had not been long in cultivation. It was no deep ploughing that turned them up. They were probably deposited or dropped, *in cumulo*, when the place was literally a moss or quagmire.”

The bronze looped celt has the socketed part very long (about 3 inches), and the blade, which is broken, is thin and chisel-like in form.

Of the spear heads, one is broken across between the socket and blade; the other, which is perfect, is slightly larger, and more finished in detail. It is leaf-shaped and measures  $11\frac{1}{2}$  inches in total length, the blade being  $9\frac{1}{8}$  inches, in length, and the raised and tapering socket runs through the blade almost to its termination. The socket is pierced with two rivet-holes in a projecting fillet which runs down, forming the termination of a bead, on each side of the central rib of the spear-head. (See Plate XXVI. fig 1.)

The bronze rings or armlets consist of three plain penannular rings, measuring about  $\frac{3}{4}$  of an inch in thickness across the middle, and terminating in slightly enlarged projecting extremities. (See Plate XXVI. fig. 2.) The others are portions of three or perhaps four rings, smaller and more slender in character, measuring about  $\frac{1}{4}$  of an inch in thickness across the middle; they taper gradually towards the extremities, which are slightly knobbed. Some of them show from three to five slight ribs or notches on the outer surface of each extremity. In the Museum of the Society there are other three perfect examples of this last peculiar variety of tapering penannular rings. Two were found with various others, along with nine bronze celts, on the farm of Redhill, near the hill of Benachie, Aberdeenshire, they measure  $2\frac{3}{4}$  inches in diameter, and were presented to the Museum by Dr John Stuart in 1853. (Proc. vol. i. p. 137.) (See Plate XXVI. fig. 3.) Another was found in a peat moss at Conage, parish of Pettie, Inverness-shire, and was presented to the Museum by the Dowager Lady Dick Lauder in 1861. (Proc. vol. iv. p. 299.)

Lastly, the pieces of tin are four in number, and appear as if they had





Fig. 3.  
(Actual size.)



Fig. 2.  
(Actual size.)



Fig. 1.  
(11½ inches long.)

SPEAR HEAD AND ARMLETS OF BRONZE.

Figs. 1 and 2. Found at Achtertyre, Elginshire.

Fig. 3. Found at Benachie, Aberdeenshire.

been the broken portions of one piece of metal, they measure about  $\frac{3}{4}$  of an inch in thickness, and altogether about 6 inches in length, and weigh 1240 grains Troy. The coating on the surface of the metal is dull and white, like white lead, probably formed of the carbonate of the metal, but it shows the clear white metal when the surface is cut. (Two of the largest portions of the tin are figured in the preceding woodcut.)

Here, then, we find a collection of ancient bronze weapons and ornaments, and along with them these broken portions of metallic tin. These last, from their slightly curved outlines, you might fancy may have been portions of a broken ring, it may be armlet, but it is, perhaps, more probable they were simply ingots, or portions of a small bar of tin, like the ingots of silver in the Museum, which have been found with manufactured gold and silver ornaments in different parts of the country.

I asked Dr Stevenson Macadam to be good enough to make a chemical analysis of these small portions of tin, and received from him the following note :—

“The small rod-like portions of tin give the following results on analysis :—

Tin,	.	.	78·66
Copper,	.	.	None
Lead,	.	.	21·34
			— 100·00

These proportions represent a solder, containing nearly 4 of tin to 1 of lead, which would fuse about 365° F., whilst the plumber's *sealed solder* of the present day contains 1 of tin to 2 of lead, and fuses at 441° F. The low fusing point of the alloy under examination would enable it to be employed with comparative ease for coating or *tinning* of bronze implements, such as the axe-heads previously analysed.

“STEVENSON MACADAM.”

May this large apparent mixture of lead with the rarer metal tin help to explain the frequent more or less abundant presence of lead in the composition of ancient bronze weapons, or ancient bronzes generally? Let me remind you, also, that the tinned lining of the Roman pots, previously referred to, contained a very large proportion, almost a

half, of lead. It is not impossible that these bronze weapons found along with this tin, may belong to about the time of the Roman occupation of Britain.

These portions of tin, I am inclined to consider, have been taken to the north of Scotland in the course of an early commerce, to be used in various metallurgic arts. This is, however, the only instance known to me of any portions of ancient metallic tin being found in Scotland.

I do not remember to have noticed any instances recorded of large rings or armlets of tin being discovered in Britain. Some curious articles of tin are however described in the "Archæological Journal," vol. viii. p. 212, 1851. These consisted of various small pennanular rings of a white metal supposed to be tin, which were found in a rude clay urn beside a human skeleton, under a tumulus on the hill known as "Dundon Beacon" in the parish of Compton Dundon, near Somerton. The discovery was described by Mr Stradling, of Roseville, Bridgewater, who states that "the metal is now much oxidated; the ring massive, and pennanular, diameter rather more than three quarters of an inch, bearing a close resemblance in dimension to the small type of golden ring-money often found in Ireland, and occasionally in this country. Mr Stradling considered those remarkable rings of white metal to have been the circulating medium in very early times." It is to be regretted that the true character of these small white metal rings was not definitely set at rest by a careful chemical analysis. The discovery of an inscribed patera of tin is recorded by Borlase in his "Cornwall," and a cup of tin found in the same county is figured in the "Archæologia," vol. xvi. Plates ix., x.

The discovery of pieces of metallic tin, associated with bronze weapons, as in this instance in Morayshire, appears to be of the greatest rarity. Dr John Philips, indeed, in a valuable memoir, "Thoughts on Ancient Metallurgy and Mining among the Brigantes, and in some other parts of Britain, suggested by a page of Pliny's Natural History," Proceedings of the Yorkshire Philosophical Society, 1848, states that:—"Cornwall chiefly, if not wholly, supplied the tin which entered so many ways into the comforts and necessities, during peace and war, of all the nations surrounding the Mediterranean and Euxine, Baltic and German Ocean; in fact, the world as distinctly known to the Roman geographers."

—"There is," Mr Philips says, "I believe, no instance of a single bit of pure tin or pure copper being found with the numerous celts, which occur in so many parts of England; nor is there any other proof given that the direct union of tin and copper was effected by the natives of Britain." Copper is so abundant in Cornwall that it might tempt us to the other hypothesis; but this copper is a sulphuret, united to the sulphuret of iron, in deep veins, and in a matrix of quartz; and these are things which render the production of pure copper one of the most refined operations in smelting. Caesar tells us, the brass used by the natives of Britain was imported ("ære utuntur importato"). Probably Cyprus,—colonised by the Phœnicians, to which old authors refer as the original source of brass, with its ancient copper mines (Tamassus), and which has given its name to the metal, might be one of the points from which bronze radiated over the Grecian, Roman, and Barbarian world."

Mr J. J. A. Worsaae on the other hand, in his "Primeval Antiquities of Denmark," translated by W. J. Thoms, London, 1849, states, that from the great similarity in composition of all the early bronze weapons, he thinks it is "highly probable that the ancient bronze . . . was diffused from one spot over the whole of Europe; which spot may be supposed to be England, because, not to mention the quantity of copper which that country produces, its rich tin mines have been known from the earliest historic periods to the nations of the south, while in the other parts of Europe there occur only very few and doubtful remains of other, and far less important tin mines, which we are justified in believing to have been worked at that time. It must, however, be observed, that according to Caesar, the Britons in his time used imported bronze" (p. 45).

Mr Worsaae believes that the bronze imported into the north of Europe was cast there into the various weapons and ornaments characteristic of the particular districts where they were made.

Later analyses of bronzes in this country and elsewhere, seem to show a greater variety in the relative proportions of the copper and tin than those described by Mr Worsaae; and the discovery of moulds of various kinds for casting bronzes in other countries as well as in Britain, suggests at least the possibility of the people of different countries melting the pure copper, and adding to it, it may be, a proportion of tin; as well as simply melting the prepared bronze itself.



With regard to Mr Philip's statement that no pure copper had been found, he refers to the account of a simple celt or axe-head in the museum of the Duke of Northumberland at Alnwick Castle, which was found in a moss in Northumberland. It resembles pure copper, he says, "but no test has been used to ascertain the fact of its being of that metal." I may mention, however, that an axe-head, stated to "consist wholly of pure copper," was found in Ratho Bog, near Edinburgh, and was brought under the notice of the Society of Antiquaries of Scotland by Sir David Brewster in 1822. An account and figure of it is published in the "*Edinburgh Philosophical Journal*," vol. vi. p. 357, 1822.

In Ireland, also, Sir W. R. Wilde, informs us, in his "*Catalogue of the Antiquities in the Museum of the Royal Irish Academy*," there have been found—"Copper weapons, apparently the forerunners of the mixed metal bronze or brass." The various articles of copper preserved in the Museum consist of some thirty "Celts, evidently of the very earliest pattern and greatest simplicity in construction, a couple of battle-axes, a sword blade of the curved broad shape usually denominated scythes, a trumpet, a few fibulæ, and some rudely-formed tools." (p. 336.)

In answer to some queries addressed by Mr Joseph Anderson to Mr Oscar Montelius, of the National Museum of Stockholm, on the discovery of articles of bronze and tin together, in the north of Europe, Mr Montelius writes:—"Tin and bronzes are but once found together in Sweden. It is the find at Langbro, not far from Stockholm; see '*Antiqvarisk Tidskrift for Sverige*,' iii. p. 258. These were found in a peat bog:—

"(a) A large broken rough ring of tin, weighing 510 grammes. The following chemical analysis was made of it in 1859 by Professor Erdmain:—

"Tin,	.	.	95·81°/.
Lead,	.	.	3·79°/.
————			99·60°/.

(b) Three bronze celts of different shapes; one of them is figured page 258. (c) A broad thin band (collar ?) of bronze, figured page 259. (d) Seven collars of bronze, all of the same form, one of them figured page 260. (e) Four double spiral rings of bronze, page 261. (f) A broad simple bracelet (?) of bronze, without ornaments. (g) Two large brooches

of bronze, figured page 262. (h) Two large pins of bronze, figured page 263. All these valuable antiquities are preserved in our Museum."

Mr Montelius also describes this discovery at Langbro in his valuable "Bronsaldern I Norra Och Mellersta Sverige, Stockholm, 1871," where he has figured several of the bronzes; none of them correspond in character to those found with the tin in Scotland. The collars, or "Halsringar," as he designates them, *Scottice* Hause (or throat) rings are each formed of a rod of bronze, tapering towards its extremities, which are hooked together. The ring is twisted on itself, so as to form a series of short alternately reversed spirals; and is similar in character to an imperfect one in our Museum, brought, I believe, from the north of Europe. It is interesting, however, to find that this tin ring also contains a proportion of lead, though much less than our Scottish example. Mr Montelius also states, that "the few and small pieces of tin found in Denmark are mentioned at page 266 in the 'Antiqvarisk Tidskrift.'" Instances of the discovery of bronze and tin associated together, would appear, therefore, to be of much rarity in the northern countries of Europe.

Mr Albert Way, in a valuable memoir on the "Enumeration of Blocks or Pigs of Lead and Tin, Relics of Roman Metallurgy, discovered in Great Britain," *Archæological Journal*, vol. xvi. p. 22, gives details and a figure of a curious double pig of tin, 11 inches long and 11 inches wide, dredged up in Falmouth Harbour. He mentions other two smaller blocks or pointed portions of a pig of tin, one 20 inches long by 9 inches wide, and 3 inches in thickness, also found in Cornwall. Mr Way contributes to the same *Journal*, vol. xxiii., another valuable memoir—"Notices of Roman Pigs of Lead found at Bristol, and of Metallurgical Relics in Cornwall, in other parts of England and Wales, and also on the Continent." In the first of Mr Way's memoirs<sup>1</sup> just referred to, he mentions an obtusely pointed fragment of bronze, found with stone mauls in the old workings at the Ormes Head, Llandudno, which he considers part of an ingot of bronze. There is also in the British Museum, he states, a perfect ingot of bronze, pointed at both its extremities, measuring about 15 inches in length, which was found in Livonia.

<sup>1</sup> The Memoirs by Mr John Phillips and by Mr Albert Way, have been printed together by Mr Way, in the *Archæological Journal*, vol. xvi. 1869.

The Rev. Mr Joass has discovered in the ruins of the Broch of Cinn Trolla,<sup>1</sup> in Sutherlandshire, two hammer-marked plates of bronze, which were probably an ancient commercial form of this metal; one of these, measuring  $11\frac{1}{4}$  inches in length, by  $7\frac{1}{2}$  in breadth, and  $\frac{1}{8}$  of an inch in thickness, and weighing 3 lbs.  $4\frac{1}{2}$  oz. avoirdupois, is now preserved in our Museum.

These various instances help to give us some little insight into the details of an ancient commerce in metals.<sup>2</sup> They seem to show that lead, metallic tin, at least an alloy of tin and lead, and also pure copper, as well as the mixed metal, bronze, and even iron,<sup>3</sup> were all among the articles of a very early commerce in Britain, and throughout Europe.

MONDAY, 11th March 1872.

DAVID LAING, Esq., LL.D., Foreign Secretary, in the Chair.

The Right Hon. the Earl of Wemyss and March was admitted without ballot, and a ballot having been taken, the following Gentlemen were admitted Fellows:—

Rev. WILLIAM DUKE, M.A., Minister of St Vigeans, Forfarshire.

HUGH POLLOCK, Esq., Donnybrook House, Cork.

ALEXANDER SHANNAN STEVENSON, Esq., Tynemouth.

ALEXANDER JOHNSTON WARDEN, Esq., Marybank House, Broughty-Ferry.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors:—

(1.) By Sir HENRY DRYDEN, Bart., Hon. Mem. S.A. Scot., &c.

Two Portfolios of Plans, Sketches and Measurements of Brochs, Stone

<sup>1</sup> See "Archæologia Scotica," Account of Cinn Trolla Broch, &c., by Rev. Mr Joass, vol. v.

<sup>2</sup> See "The Ancient Workers and Artificers in Metals, from References in the Old Testament, and other Ancient Writers," by James Napier, F.C.S., &c., London and Edinburgh, 1856.

<sup>3</sup> For details of Iron, &c., see "The Celt, the Roman and the Saxon," by T. Wright, F.S.A., &c.

Circles, and Lines of Standing Stones in the north of Scotland, comprising the following :—

Ground Plan, Section, and Measurements of the Broch of Yarhouse, Thrumster, Caithness. Seven sheets. (Scale, 3-8ths to 2 feet.)

Plan and Sections of the Broch of Brounaben, Thrumster, Caithness. (Scale, 3-8ths to 2 feet.)

General Plan and Section of the U-shaped group of Standing Stones at Ach-Kinloch (Stemster) Latheron, Caithness (scale, 4-8ths to 10 feet), with detailed plans, elevations, and measurements of each Stone. (Scale, 3-8ths to 2 feet.)

General Plan and Section of Stone Circle at Guidebest, Latheron, Caithness (scale, 4-8ths to 10 feet), and detailed plans and elevations of each Stone. (Scale, 3-8ths to 2 feet.)

Plan and Section of the Broch at Lybster (Crosskirk), in the parish of Reay, Caithness. (Scale, 3-8ths to 2 feet.)

Plan and Sections of the Broch of Castle Chonil, in Glenbeg, near Glenelg, Inverness-shire. Three sheets. (Scale, 3-8ths to 2 feet.)

Plan and Sections of the Broch of Castle-Grugach, at Loch Duich, Inverness-shire. (Scale, 3-8ths to 2 feet.)

General Plan of the seven lines of Standing Stones on "Battle Moss," near Yarhouse Loch, Thrumster, Caithness. (Scale, 4-8ths to 10 feet.)

General Plan of six lines of Standing Stones, converging to a small Cairn, with central Cist, at Garry Whin, near Whaligoe, Caithness. (Scale, 4-8ths to 10 feet.)

General Plan of six lines of Standing Stones, converging towards a Cairn, with central Cist, at Camster, Caithness. (Scale, 4-8ths to 10 feet.)

General Plan and Section of twenty-two lines of Standing Stones at the hill of the "Many Stones," Clyth, Caithness. (Scale, 4-8ths to 10 feet.)

(2.) By DAVID GRIEVE, Esq., F.S.A. Scot.

A Collection of Shells, Bones of Animals, &c., from a Kitchen Midden, on the island of Inchkeith. (See detailed List in subsequent communication by Mr Grieve.)



- (3.) By John CHALMERS. Esq., F.S.A. Scot., and Mr ANDERSON, Keeper of the Museum.

A Collection of Shells, Bones of Animals, Vitriified Matter, &c., from a Kitchen Midden on the level summit of the Crag overlooking Dunsappie Loch, Arthur's Seat.

The shells are those of the common edible shell-fish, including the periwinkle, limpet, and cockle; the bones include those of the ox, sheep, and pig, the long bones being broken and split, and mostly calcined either wholly or partially; the vitrified matter appears to be the result of numerous fires kindled here and there over the area.

- (4.) By JOHN M'CONNEL, jun., Esq., Chapelheron, through BENJAMIN NEEVE PEACH, Esq., of the Geological Survey.

Polished Celt of indurated Claystone, 7 inches in length by  $2\frac{3}{4}$  inches broad at the cutting end, narrowing to  $1\frac{1}{2}$  inches at the small end, found on the farm of Chapelheron, near Whithorn.

- (5.) By ROBERT MERCER, of Scotsbank, Esq., F.S.A. Scot., through JAMES DRUMMOND, Esq., R.S.A., F.S.A. Scot.

Two Bronze Patellas. One has the handle,  $6\frac{1}{2}$  inches long, and 1 inch broad where it joins to the bowl, terminating at the end in a hook like the head of a serpent; the bowl, which is shallow, is 6 inches diameter and  $1\frac{3}{4}$  inch deep inside. The other, which wants the handle, is elegantly made and covered outside with an extremely fine green patina. It is tinned inside, and also on the outside in a band  $\frac{3}{4}$  of an inch wide round the upper border immediately below the rim. The bowl measures internally  $6\frac{3}{4}$  inches diameter and 4 inches deep.

- (6.) By WILLIAM FETTES DOUGLAS, Esq., R.S.A.

Neunter Bericht der Königl. Schleswig Holstein-Lauenburgischen Gesellschaft für die Sammlung und Erhaltung Vaterlandischer Altherthümer. 1844. 8vo.

- (7.) By the SOCIETY OF ANTIQUARIES OF LONDON.

Proceedings of the Society of Antiquaries of London. Second Series. Vol. V. No. II.

(8.) By the HISTORICAL SOCIETY OF LANCASHIRE AND CHESHIRE.

Transactions of the Historical Society of Lancashire and Cheshire.  
New Series. Vol. IX.

(9.) By the Right Hon. Lord ROMILLY, the Master of the Rolls.  
Calendar of State Papers, Foreign. 8vo. 1566-1568.

(10.) By the MANX SOCIETY.  
Records of the Tynwald and St John's Chapels. 8vo. Vol. XIX.

(11.) By ROBERT ORMISTON, Esq., through COSMO INNES, Esq., LL.D.,  
F.S.A. Scot.

Four Letters from Oliver Cromwell to Sir Arthur Heselridge, Governor  
of Newcastle-upon-Tyne. 8vo, pp. 17.

There were also exhibited :—

(1.) By Rev. NORMAN MACLEOD, D.D., Barony Parish, Glasgow.

Bronze Tortoise-shaped Brooch, and Bronze Pin, 6 inches in length,  
with open lozenge-shaped head, found in the island of Tiree.

(2.) By JOHN MACDONALD, Esq., Newton, Lochmaddy.

Comb of Bone, with semicircular back, 7 inches in length ; flat circular  
Bronze Brooch with Rune-like ornament,  $1\frac{1}{4}$  inches in diameter ; a small  
Bronze Brooch or Buckle,  $\frac{1}{2}$  inch in diameter ; and Flint Arrowhead,  
found in clearing out a stone cist in a sandy hillock in South Uist.

(3.) By MILLEN COUGHTRY, Esq., M.B., Edinburgh.

Three Combs from the South Pacific, made of Reeds tied together.  
(See Plate XVIII., fig. 11.)

The following Communications were read :—

## I.

NOTICE OF THE PROBABLE AUTHOR OF THE UNPUBLISHED HISTORY OF SCOTLAND, ERRONEOUSLY ATTRIBUTED TO BISHOP ELPHINSTONE OF ABERDEEN. By WILLIAM F. SKENE, Esq., LL.D., F.S.A. Scot.

In the two papers which I had the honour of laying before the Society containing a description of the MSS. of Fordun's *Scotichronicon*, I showed that Bishop Elphinstone could not possibly be the author of this unpublished history, which consists in the main of the five books of Fordun, with a continuation to the death of James I. I showed, by a comparison of the MSS., that it must have been compiled in the year 1461, when Bishop Elphinstone was still a student at Glasgow College, and that the author himself tells us that he was in France from 1428 to 1430, and again from 1436 to 1445, while Bishop Elphinstone was not born till the year 1437.

In endeavouring to ascertain who the anonymous author of this unpublished history really was, we have, first, to put together all the indications afforded by the work itself; and, secondly, to examine whether the same marks apply to the history of any Scot, who was in France at the period above indicated.

The indications afforded by the MSS. are as follows:—

I. The author was in France during the period when the Maid of Orleans played her part, knew her personally, and was present at her death in 1430.

This appears from a "prologus," which is found only in two MSS., viz., the Marchmont and the Brussels MS. In this he tells us, "that he will narrate those wonderful events, which he has seen, known, and heard of beyond the limits of this kingdom, and especially of that wonderful maid, who was the cause of the recovery of the kingdom of France from the hands of the tyrant Henry, King of England, whom I saw, and knew, and was with her during all her acts in the said recovery, even to the end of her life."

II. He was also in France during the life of the Princess Margaret of Scotland after her marriage with the Dauphin, and was in a position which brought him into daily intercourse with her.

After narrating her death in 1445, he adds, "For I, who write this, saw her every day, alive and amusing herself with the King and Queen of France, and that continuously for nine years. Finally, at the time when the marriage was contracted between the King of England and the daughter of the King of Sicily, the Queen of France's brother, I saw her within the short space of eight days alive and well, and dead and embalmed, and lying in a leaden coffin in the Cathedral Church of Chalons."

III. He was a Scotsman, for he translated a Latin poem on the death of the Dauphiness into Scots, at the command of her brother James II. of Scotland.

IV. He was probably a cleric, because he tells us, in the prologue, that he compiled his work at the command of the Abbot of Dunfermline.

V. And he was also probably a Highlander, for he usually gives Highland names in their Gaelic form. Thus, when Bower mentions the Clan Katan, the author, in the corresponding passage, substitutes the Gaelic form of Clan Gillechatan.

Now, on turning to the Scots who were in France at this time, we find that, in 1420, the States of Scotland sent a body of 7000 men to the assistance of the French in their struggle with the English, under the command of John Earl of Buchan, Archibald Earl of Wigton, and Sir John Stewart of Derneley, who was made constable of the Scotch army in France. In 1425, according to Bower, Sir John Stewart was sent, along with the Archbishop of Rheims, on an embassy to Scotland, to obtain further assistance, and to negotiate a marriage between the Dauphin of France and the Princess Margaret of Scotland; and, in 1428, we find him in the town of Orleans, assisting with his Scotch troops in the defence of that town against the English, who besieged it. On the 10th February in that year, he was slain in a sortie from the town, and was buried in the Lady Chapel of the Cathedral of Orleans.

Now, in the French accounts of Jean Mauleon, receiver-general of taxes, there appears, in 1427, a grant to Sir John Stewart of a sum of money for the expense of his embassy to Scotland. It is as follows:—"Par mandement, du 24 Octobre à Messire Jehan Stuart, Connetable des Escosyzs pour lui aider à faire son veaige en Escoce et pour autre causes, cinq cent livres." And this is followed by an entry, "A Maitre Morice



de Boconan, parent dudit Connetable, 40 livres;" that is, to Master Maurice of Buchanan, relation of the said Constable, forty pounds.

The relationship between Sir John Stewart of Derneley and Maurice of Buchanan was this. Sir John Stewart had married Elizabeth, second daughter of Duncan, Earl of Lennox, whose eldest daughter Isabella married Murdoc, Duke of Albany. Their daughter, Isabel, married Sir Walter de Buchanan, by whom she had three sons—Patrick, his successor, *Mauritius de Buchanan*, and Thomas de Buchanan.

This Mauritius or Maurice of Buchanan was therefore grandnephew, by marriage, of Sir John Stewart of Derneley. He was a master of arts, as appears by the title of Maitre, but must have been quite a young man, and in Sir John Stewart's suite, and therefore must have been in the town of Orleans, when Joan of Arc raised the siege, and entered the town in May 1429, only three months after Sir John Stewart's death. Maurice of Buchanan must thus have seen her, and known her, and may have been present at her death. After this he returned to Scotland; for Bower, in narrating the voyage of the Princess Margaret to France in 1436, under the charge of the Bishop of Brechin and the Earl of Orkney, gives a list of her suite. In this list he gives the names of six knights. Then follow "Magistri Johannes Stewart, præpositus de Methven, et *Mauritius de Buchanan, thesaurarius Delphinissæ, clerici.*" If Maurice of Buchanan was treasurer to the Dauphiness, he occupied a position that must have brought him into continual and close intercourse with her.

He was also, as we see, a cleric, a Scotsman, and a Highlander of Lennox, and thus combines in his person all the conditions indicated by the work itself.

There is, however, a curious corroboration of this in the MSS. In narrating the battle of Bauge, fought in 1421, when the English were defeated and their leader the Duke of Clarence slain, Bower states that the Duke was killed by the Earl of Buchan. The author of this work, however, in his account, says, that "in such a general conflict it was difficult to ascertain with certainty by whom each person was slain, but the public gossip was, that a Scottish Highlander, Alexander Macauslan from Lennox, a cadet of the family of the Lairds of Buchanan, slew the Duke of Clarence, in proof of which, the golden coronet, adorned with precious stones, which the Duke carried on his helmet, was brought from

the field of battle by the said Macauslan, who sold it to Sir John Stewart of Derneley for 1000 nobles, by whom it was afterwards pledged to Robert of Houston for a sum of 5000 nobles, which he owed." Now these facts could hardly have been known to one who was not in Sir John Stewart's suite, and his claiming the credit of having killed the Duke of Clarence for a Buchanan, points to his having been himself one of the name.

There is, however, reason to think that this was the work which was known by the name of the Book of Pluscarden.

George Buchanan, in his History of Scotland, refers on two different occasions to what he calls the Liber Pluscartensis, or Book of Pluscarden. Now, the first reference consists of a quotation of this very passage, in which the author claims for a Buchanan the credit of having slain the Duke of Clarence. In the second reference, he states that the author of the Liber Pluscardensis was the companion of the Princess, both in her voyage and in her death, and bears testimony to the affection borne her by her husband, and brother, and sister-in-law, and gives a poem full of her praise, which has been translated into Scots.

There is therefore little doubt that, by the Book of Pluscarden, George Buchanan means this unpublished history.

Pluscarden was a Cistercian Priory founded by Alexander the Second, and Spottiswood, in his account of it, adds, "It is commonly reported that the famous Book of Pluscarden, seen and perused by George Buchanan, was penned here." I am indebted to Mr Stuart for a passage in the history of the Abbots of Kinloss by Ferrerius, which bears that during the tenure of the abbacy by John Flutere, seventeenth Abbot from 1445 to 1460, the White monks were ejected from Pluscarden, and Black monks, or Benedictines, introduced. These monks seem to have come from Dunfermline, for in the chartulary of Dunfermline there is, in 1454, a commission by the Abbot of Dunfermline to the Prior of Pluscarden, in which it is called "a cell of Dunfermline," and "a convent now of the order of St Benedict"; and 1456, another commission by the Abbot of Dunfermline to William de Boyis, his sacristan, to visit the Priory of Pluscardyn, with a view to its reformation,—a commission which ended in the usual way, for in 1460 we find the Abbot confirming a deed granted by William de Boyis, Prior of the Priory of Pluscarden.

In the following year 1461, the author writes his history at the com-

mand of the Abbot of Dunfermline, which would be intelligible enough if he had then retired to Pluscarden, at that time a cell of Dunfermline, and under the Abbot's jurisdiction.

At the Reformation the Abbacy of Dunfermline had been granted in 1585 to Patrick, master of Gray, and in 1593 was annexed by Act of Parliament to the Crown ; but the Priory of Pluscarden was granted by Queen Mary in 1565 to Lord Seton, who conveyed it to his third son, Sir Alexander Seton, who was made an extraordinary Lord of Session in 1585, and took his seat by the title of Prior of the Priory of Pluscarden. The priory was confirmed to him in 1589, and on 4th March 1605-6 he was created Earl of Dunfermline. Now Lord Fairfax, in his note on the Bodleian MS. of this work, says, "Note that the Earl of Dunfermline told me in the year 1657, that he had a very fair ancient MS. of the history of Scotland formerly belonging to that monastery." This was no doubt the Book of Pluscarden, which had come into the possession of his father as Prior.

The conclusion I come to is, therefore, that the *Liber Pluscartensis*, or Book of Pluscarden, is the correct name of this work, and that it was probably compiled in the Priory of Pluscarden, in the year 1461, by Maurice Buchanan, who was a cleric, and had been treasurer to the Dauphiness.

## II.

NOTICE OF A CROSS-SHAFT AT ARTHURLEE, RENFREWSHIRE. BY  
T. ETHERINGTON COOKE, F.S.A. SCOT. (PLATE XXVII.)

The exact original site of this cross is a matter of conjecture ; but there is good reason for supposing it to have stood in a field on the Arthurlee estate, in the parish of Neilston, and which many years ago was known as the "Cross-stane Field," though latterly as the "Thorn Field." A tradition exists in the district that a combat took place near this spot between two chiefs named Arthur and Neil (giving names respectively to Arthur-lee and Neil's-ton, and that both dying from their wounds, the former was buried here, while the latter was interred at "Cross-stane Brae," to the south of Neilston village, where a sepulchral cross is known to have been standing at the end of last century. Another conjecture

supposes the cross to have marked the burial-place of a chief of the name of Arthur, who may have fallen in conflict with the Danes at the battle of Crosstab, the scene of which lies about a mile north of Arthurlee, and at which place formerly stood a stone pillar, said to have been erected in commemoration of the battle. The titles of the estate, I am informed, throw no light on the origin of its name, which may well date from a period contemporary with the subject of this notice. In later times Arthurlee was a possession of the Stewarts of Darnley.

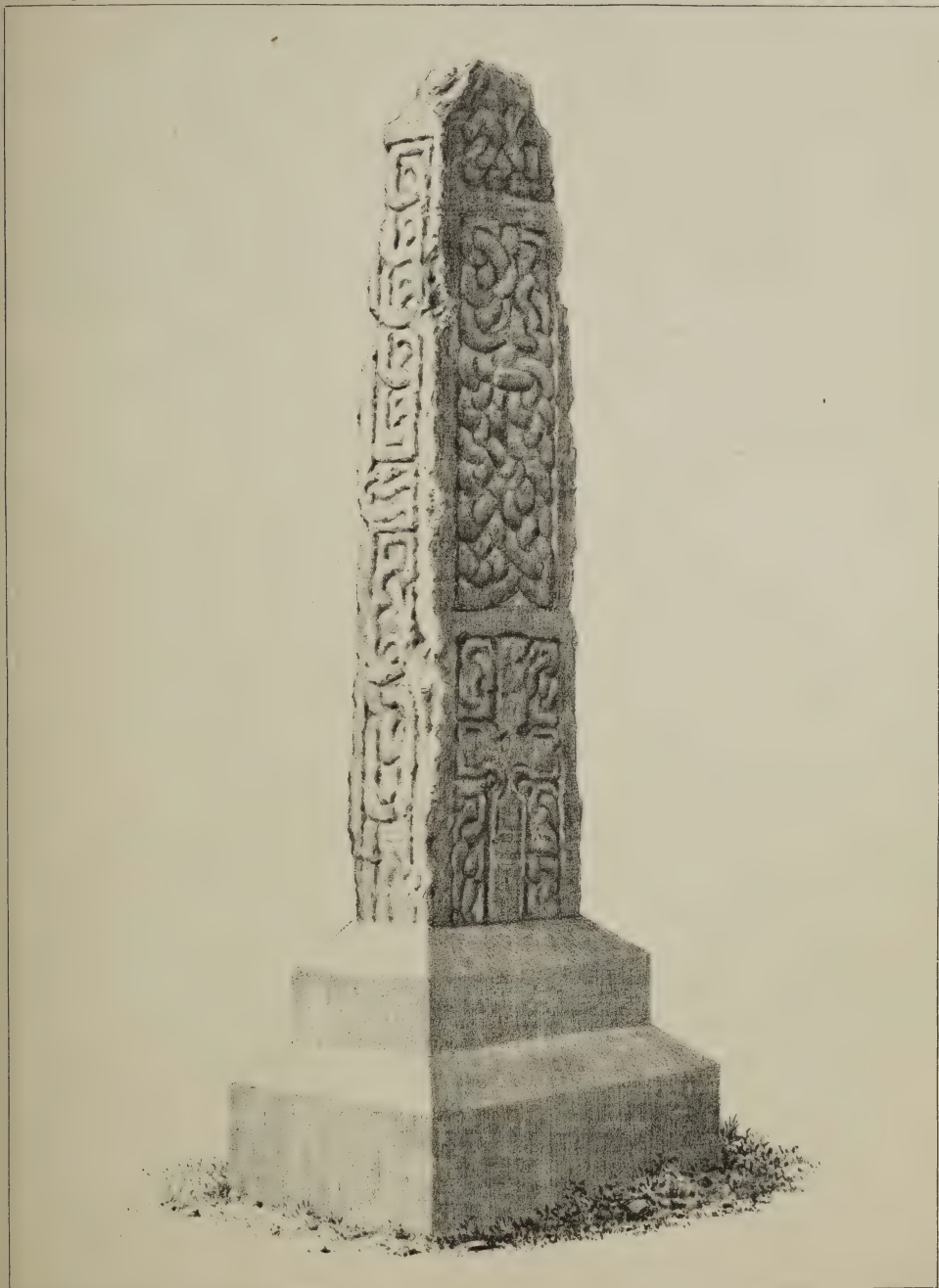
For an unknown length of time this cross-shaft formed a convenient stepping-stone across a burn at the foot of the field above alluded to, for the frequenters of a now disused footpath leading from Arthurlee House to the village of Neilston, about a mile distant. The attention of the present proprietor of the estate, James Dunlop, Esq., having been called to it, he has caused it to be erected as near the supposed original site as circumstances would permit, with a view to its preservation. A diligent search has been made for the upper portion of the cross, but without success. Its form was probably the same as that sculptured on the lower panel of the shaft. The stone has been worn nearly smooth on the reverse side, from the use it has served as a foot-bridge. The ornamentation, however, was similar to that of the front, but without the cross in the lower division. The edges were not divided into corresponding panels. The height of the stone is 6 feet 9 inches (about 6 inches of which is built into the new base); width, at widest part, 1 foot 9½ inches; thickness at base, 8½ inches.

### III.

#### ON THE DISCOVERY OF A KITCHEN-MIDDEN ON INCHKEITH. By DAVID GRIEVE, Esq., F.S.A. Scot.

In the summer of 1870, having occasion to pay a visit to Inchkeith to inspect what I had been informed was a raised beach, I found that the place referred to, instead of being such, was in reality a kitchen-midden. The locality is within a gunshot of the landing pier on the east side, and in the slope or talus inclining from the cliffs to the beach. At the bottom, close to the beach, this talus is worn or washed away, so as to





Etherington Cooke, del.

W & A K Johnston, Edin.

SCULPTURED CROSS AT ARTHURLEE, RENFREWSHIRE.



form a section of earth and stones, varying in height from 8 to 10 feet above high water-mark. In the face of this section I observed bones protruding in various places; there was also abundance of the shells of edible molluscs, and, in short, I saw sufficient to convince me of the exact nature of the deposit. On returning to town I brought some of the bones with me, which I showed to our respected Keeper, Mr Anderson, who arranged to accompany me on a second visit to the island. This we accomplished some weeks afterwards. On that occasion Mr Anderson inspected the ground, and helped to fill another basket with bones, &c., and on the whole, I believe, was satisfied that this was a veritable kitchen-midden.

Some of the bones have been split, and a few bear the marks of fire. The earth in some places of the bank is very black, and seems to have a considerable intermixture of carbonaceous matter.

The collection of bones I placed in the hands of my friend Dr M'Bain, R.N., of Trinity, who was so kind as to take very considerable trouble in identifying and naming them, and to whom my best thanks are due.

The following is the list he has furnished me with :—

1. Basi-occipital and basi-sphenoid portions of skull of the grey seal (*Halichærus gryphus*); probably a female skull.
2. Cervical vertebra of grey seal.
3. Left occipital condyle, mastoid process, temporal fossa, and petrous bone of sheep (*Ovis aries*).
4. Four lumbar vertebræ of sheep.
5. Head of ulna of sheep.
6. First dorsal vertebra of sheep.
7. Humerus of sheep.
8. Fourth cervical vertebra of pig (*Sus scrofa*).
9. Head of left tibia of ox (young) (*Bos taurus*).
10. Cannon bone of hind foot of *Bos*.
11. Mastoid process of *Bos*.
12. Dorsal vertebra of *Bos*.
13. Metacarpal bone of *Bos*.
14. Atlas of *Bos*.
15. Toe bone of *Bos*.

16. Cannon bones of horse (*Equus*).
17. Parts of jaw, and several teeth, of horse.
18. Jaw bones and other bones of the rabbit (*Lepus cuniculus*).

Besides the bones named in the above list many portions of bones, chiefly of the sheep and ox (some split), were also found.

The shells found were—*Littorina littorea*, *Patella vulgaris*, *Buccinum undatum*, *Ostrea edulis*, *Tapes pullastra*, *Purpura lapillus*, *Pecten varius* and *Pecten maximus*.

The latter named esculent mollusc is not now common in the Firth of Forth, but all the others mentioned are to be found in abundance.

With regard to the bones, it will be seen they are all of domestic animals, with the exception of the seal and the rabbit. The rabbit burrows and is in a wild state on the island at present, and was most probably so at the period when the midden was deposited. The grey seal is now extinct in the Firth.

My opinion is that the encampment or lodgment in connection with this midden was situated on a former plateau in front of, and under the cliff at the top of the embankment, and that the soil (which is very loose) has, in the lapse of time, gradually slipped away and carried the debris of bones and shells along with it. I am inclined to this belief, because abundance of shells are still found at the top of the bank, although the bones are more abundant at the bottom.

There is no evidence as to the period when these rejecta were first cast forth, and it would be difficult, and indeed unnecessary, to hazard a conjecture. This much, however, may be said, that judging from the decayed state of the bones and shells, more particularly the shells, they are of very considerable antiquity.

The delay which has occurred in reporting this matter to the Society was owing to a desire on my part to make a further exploration, but the nature of my engagements has hitherto prevented this. The mention, however, by Mr Milne Home, in his recent work on "The Estuary of the Forth," of the bones of the grey seal having been found "in the Kitchen-midden at Inchkeith" (his informant being Dr M'Bain), before any public announcement of the discovery of a midden had appeared, I take to



be a quiet and just rebuke (although not meant as such) for my dilatoriness, and it induces me at once to chronicle this small matter and to offer the foregoing particulars.

The remains described are presented to the Society's Museum.

#### IV.

NOTICE OF AN UNDERGROUND STRUCTURE RECENTLY DISCOVERED  
ON THE FARM OF MICKLE KINORD, ABERDEENSHIRE. BY REV. J.  
G. MICHIE, M.A., COLDSTONE. COMMUNICATED BY JOHN STUART, Esq.,  
LL.D., SECRETARY. (PLATE XXVIII.)

On the southern margin of Loch Kinord there is a peninsula, known by the name of Gardè-been, which bears evident traces of having been once fortified by a moat and rampart, and shows faint traces of a rampart all round. Before the level of the lake was reduced in 1826 the water very nearly encircled this place. The ground immediately adjacent has been under cultivation for about forty years; and no one recollects anything peculiar about the surface before it was brought under the plough, except some traces of a paved way noticed below.

While a servant was ploughing in this field, at a spot about 100 yards from the moat of Gardè-been, he felt his plough irons several times graze the surface of a stone, and thinking the sound hollow, he made some investigation, and found that beneath the stone there was a space nearly filled with soft mould. With some assistance from the farm the stone was removed and turned out to be a granite slab of an irregular oblong shape, measuring 4 feet 7 inches in medial length and 3 feet in average breadth. It was supported at either end by flat-faced stones set on end and laid together with some care. The space thus enclosed was 3 feet broad at the top, 2 feet at the bottom, and 20 inches deep. This portion was also roughly paved with stones, but there was no pavement in any other part. A stone ball 3 inches in diameter was found among the soil excavated; something resembling a bone was also discovered, but as it crumbled away in the handling, it is doubtful whether it really was one or not. The stone-ball has been taken charge of by Mr Brooks, Glen Tanar Forest. In attempting to remove a second cover the stone was

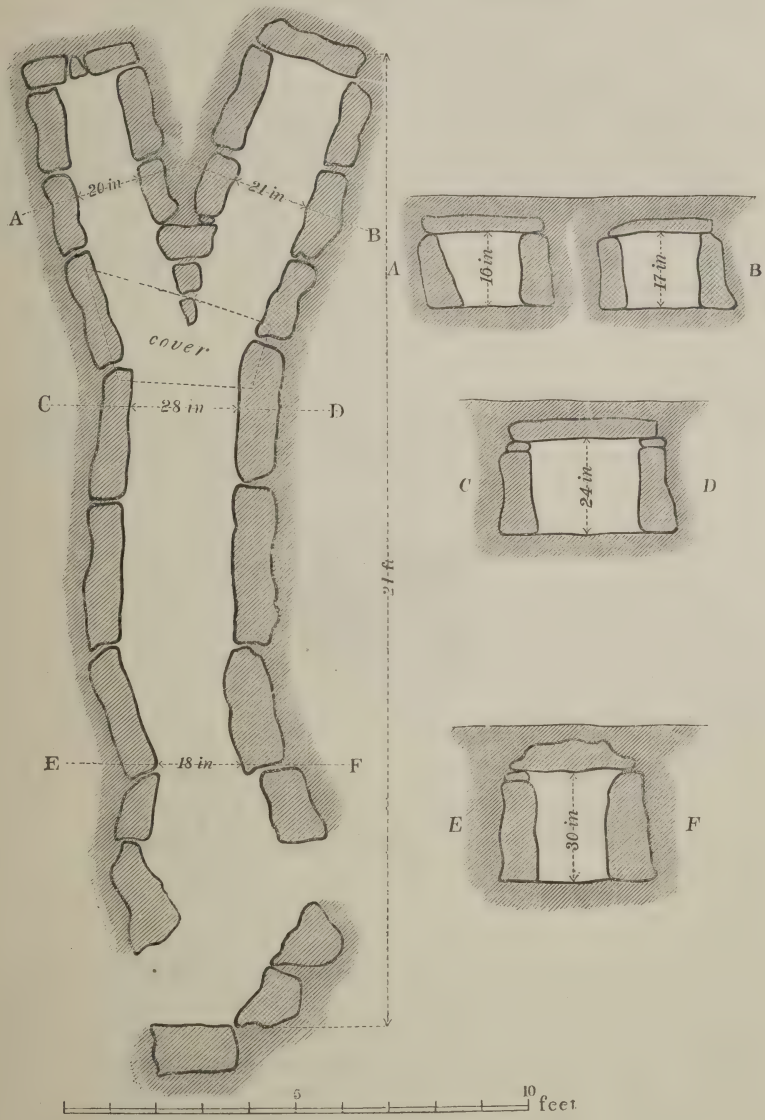
broken ; but judging from the fragments it does not appear to have been dressed, but to have been a rough gneiss boulder.

A few days after its discovery, Mr Brooks caused the whole space to be cleared out, and the slab to be replaced in its original position.

[The accompanying plate (from a survey and drawing by Mr Alexander Ogilvy, communicated by Sir John Clark, Bart., F.S.A. Scot.) shows the ground plan, sections and measurements of this curious structure.]

The side walls are composed of a single course of stones set on edge ; some of these are placed with some art and apparent care, both as to joints and levelling atop, but the rest are roughly set side by side. The entire length of the structure is 21 feet ; and the broadest part, at the bifurcation, is 3 feet, the passage gradually narrowing towards E, F, where it is only 18 inches wide and 30 inches high ; one of the covers in position at this part is a shapeless block of gneiss (the rock most abundant in the neighbourhood), which probably would weigh a little less than  $1\frac{1}{2}$  cwt., *i.e.*, about a fair lift for a man. Under it was found a concave stone in the bottom with the concavity turned upwards. The hollow appears to be the result of the natural cleavage of the block from which it has been obtained. It is in position. Below the large flag, and for some distance (2 or 3 feet) towards *d*, a quantity of cinders and charred wood was found, which Mr Brooks took charge of. The side stones at this part bore marks of the action of fire, but the overlying flag was but slightly stained with smoke.

An old man who had occupied this piece of land about forty years ago, informs me that while trenching a part of it opposite to Gardè-been, he came upon a paved way passing over a small marsh, but states that it ceased when the hard ground was reached. Having got him on the spot, I asked him to point out, as nearly as he could recollect, the direction taken by this paved way. He did so without hesitation. The line he indicated fell forty yards or thereabout to the left, or east of the underground structure now excavated.



PLAN AND SECTION OF UNDERGROUND STRUCTURE AT MEIKLE KINORD, ABERDEENSHIRE.

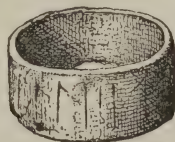
## V.

NOTICE OF A RUNIC DOOR FROM ICELAND, ORNAMENTED WITH CARVED DRAGONS AND A SCENE REPRESENTING THE SLAYING OF A DRAGON. WITH ENGRAVINGS OF THE DOOR. BY PROFESSOR GEORGE STEPHENS, F.S.A., COPENHAGEN.

(This communication is reserved for the "Archæologia Scotica," Vol. V., now in the press.)

## VI.

NOTICE OF THE RUNIC RING RECENTLY FOUND IN CRAMOND CHURCH-YARD. BY PROFESSOR GEORGE STEPHENS, F.S.A., COPENHAGEN.



My attention was first drawn to this piece by Robert Ferguson, Esq., of Carlisle, and I instantly took steps to get further help from the learned keeper of the Museum to which it had been given. Mr Anderson did all in his power to oblige me. He forwarded me an impression of the runes, a sun-picture of the ring itself, corrected my engraving for me, and has thus enabled me to lay this old-lafe before my readers as



chemityped by my artist, J. Magnus Petersen. Not content with this, he was also good enough to add the following information, in a note dated June 29, 1871 :—

“The ring is a plain hoop of bronze, quite flat inside, but having the edges worn and rounded on the outside. A small part is broken on one side, and a slight corrosion is beside the broken part. The metal is not thicker than an English sixpence. The breadth of the band is  $\frac{3}{8}$ ths of an inch, and the diameter of the ring  $\frac{3}{4}$ ths of an inch. The ring was found in the churchyard of Cramond, near Edinburgh, about eighteen months ago. It was found 3 feet below the surface, near the oldest part of the church, when the grave-digger was digging a grave there. He happened recently to mention to the minister of the parish, the Rev. Dr Colvin, that he had found a ring, and Dr Colvin immediately secured it and presented it to the Museum of the Society of Antiquaries of Scotland.”

I leave it to the ingenious reader to decipher this piece. As Mr Anderson remarks in a previous letter, “the runes are very faintly cut, and the beginning of the inscription is not indicated. It may begin anywhere.” On this account, and as here and there it has suffered so much that several of the staves are doubtful, we are at a loss what to make of it. The writing is plainly in old English runes, but I, for my part, cannot say whether they are intended to spell some name, or are words contracted, or are a risting cabalistic, or amuletic. In connection with this uncertainty, my loose attribution of the age of this object to *about the tenth century*, is more than usually a mere approximative guess.

MONDAY, 8th April 1872.

THOMAS B. JOHNSTON, Esq., Vice-President, in the Chair.

A ballot having been taken, the following Gentleman was elected a Fellow of the Society:—

GEORGE WILSON, Esq., S.S.C., Minto Street.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the donors:—

- (1.) By Mr PETER HARRIS, farmer, through Rev. GEORGE WILSON, Glenluce, Corr. Mem. S.A. Scot.

A Polished Celt of indurated claystone, with flattened edges, measuring



Celt found at Ervie, showing mark of Handle. 8 inches long.



8 inches in length, 2 inches across the wide end, and 1 inch across the narrow end. At the distance of 2 inches from the small end, a band of darker colour,  $1\frac{1}{2}$  inch in width, crosses the celt obliquely on both sides. This is due to the action of the decaying wooden handle, which seems to have encircled the celt, and has either discoloured the portion of the stone immediately underneath it, or has perhaps preserved it from the bleaching action of the moss water by which the colour has been abstracted from the unprotected surface of the celt. A similar discoloration underneath the handle, running also obliquely across the celt, is discernible on the specimen found in the Solway Moss, and now in the British Museum. This is the only Scottish specimen on record with which the remains of the handle were actually found, but there is in the Society's Museum

another specimen of a celt of similar form to the Ervie one, which also

bears the mark of the handle. It was found in Glenshee, Forfarshire, and has been figured in the present volume of the Proceedings, p. 174. The discoloration is so slight that it is not perceptible in the figure, but that on the Ervie specimen is very marked. It is well shown in the accompanying woodcut.

- (2.) By Rev. JAMES MORRISON, F.C. Minister, Urquhart, Elginshire,  
Corr. Mem. S.A. Scot.

Oblong flattened oval implement of Flint, 4 inches in length by 2 inches in greatest breadth. It tapers to a point at one end, the other is broken square off. One edge is straighter than the other, and the edges are worked on one side of the flake only, like those of a scraper.

Scraper of greyish flint,  $2\frac{1}{2}$  inches long,  $\frac{3}{4}$ ths of an inch across the flat side at the rounded point, and  $\frac{1}{2}$  an inch at the other end. It has been worked with great care, and is unusually long.

Five specimens of Flint Flakes, worked on the edges.

Tube of Bronze,  $3\frac{1}{2}$  inches long and  $\frac{1}{2}$  an inch in diameter, with an expanded end, like the mouthpiece of a trumpet, and having on one side a loop like that of a socketed celt, within half an inch of the other end.

- (3.) By the Rev. JAMES BRODIE, Monimail, Corr. Mem. S.A. Scot.

A collection of Flint Implements, enclosed in glass case, comprising a Celt of black flint, 8 inches long; seventeen Arrow heads, with barbs and stem; three Arrow heads, with tang and without barbs; five leaf-shaped Arrow heads, and two lozenge-shaped. (See subsequent communication by Rev. Mr Brodie.)

- (4.) By Messrs JOHN DICKSON & SONS, Gunmakers, Princes Street,  
through Dr JOHN ALEXANDER SMITH, V.P.S.A. Scot.

Fourteen specimens of Gun Flints, older and more recent forms. The older forms are simply wedge-shaped, and dressed only along the sides; the more recent are dressed along the back, and formed from flakes with two parallel faces.

(5.) By JAMES COWAN, Esq., F.S.A. Scot.

Portion of an Egyptian Bas-relief on a slab of grey sandstone, 22 inches by 15. It consists of the upper half of a human figure, holding a staff, and surmounted by portions apparently of hieroglyphical carvings.

(6.) By Mr JAMES MACKENZIE, Chemist, 49 George IV. Bridge.

Two Pieces of the State Bed of Amisfield Castle, and portion of an Oak Cornice, said to have been taken from Dumfries Castle.

(7.) By Mr FAIRGRIEVE, Proprietor of the Menagerie.

Pair of Spurs with Rowels,  $3\frac{1}{2}$  inches diameter, from Abyssinia.

(8.) By H. MEREWETHER, Esq. F.S.A. Scot.

A Chinese Razor.

Diary of a Dean; being an Account of the Excavation of Silbury Hill, &c. By the late John Merewether, D.D., Dean of Hereford. 8vo.

(9.) By the IMPERIAL COMMISSION OF ARCHÆOLOGY OF RUSSIA.

Compte-Rendu de la Commission Impériale Archæologique pour l'Année 1869. 4to. Avec un Atlas, folio. St Petersburg. 1870.

(10.) By the AMERICAN PHILOSOPHICAL SOCIETY.

Proceedings of the American Philosophical Society. Vol. XII. Pt. 2.  
Transactions of the American Philosophical Society. Vol. XIV. p. 3.

(11.) By the Rev. CHARLES ROGERS, LL.D., F.S.A. Scot., the Author.

The Scottish Branch of the Norman House of Roger, with a Genealogical Sketch of the Family of Playfair. London: Printed for Private Circulation. 8vo. 1872.

There were also exhibited:—

(1.) By the Most Hon. the Marquis of LOTHIAN, through Sir WALTER ELLIOT of Wolfelee, K.S.I., F.S.A. Scot.

A Stone Mould found at Timpendean, near Jedburgh. (See Plate XXX., figs. 1 and 2.)





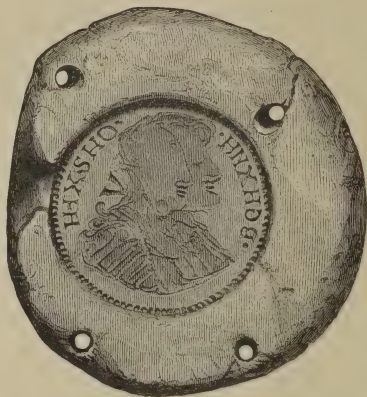


Fig. 1.



Fig. 2.

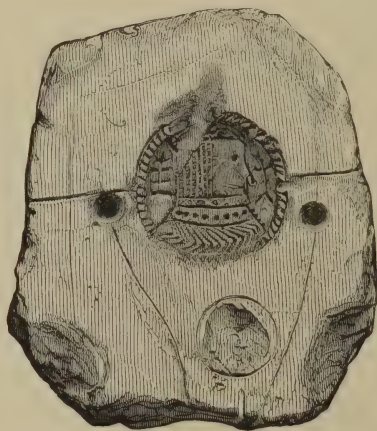


Fig. 3.



Fig. 4.

STONE MOULDS FOUND NEAR JEDBURGH.

Fig. 1. Mould found at Timpandean (actual size).

Fig. 3. Mould found at Swinnie (half size).

Fig. 2. Impression of do. (actual size).

Fig. 4. Impression of do. (do).

Sir Walter Elliot stated that this curious mould was found on the 7th March last, by Constable Elliot Jackson, in a lea field on the farm of Timpendean. The constable was crossing the corner of a field which lies in the angle formed by the junction of the road leading to St Boswell's, &c., by Ancrum Bridge with the Kelso and Hawick turnpike, and in doing so his foot struck the mould, which was lying on the surface, and its roundish form attracting his attention, he picked it up, and finding it a curious relic he brought it to the station for preservation. It was afterwards sent to the Marquis of Lothian, on whose lands it was found.

The mould has evidently been intended for producing imitations of some piece of money. The style and character of the piece somewhat resembles that of some of the coins of William and Mary. The figures on the mould are not unlike rude imitations of the portraits of that king and queen, but the legend is not like that on any coins of this or indeed of any other reign.

Another curious Stone Mould, which was picked up on the farm of Swinnie, a few miles to the south of Jedburgh, in 1862 (Proc. vol. v. p. 53), and is now in the Society's Museum, is here reproduced for the sake of comparison. (See Plate XXX., figs. 3 and 4.)

(2.) By HENRY STEUART, Esq., Rothesay.

Clay Urn,  $6\frac{1}{2}$  inches high and 6 inches across the mouth, unornamented, found in a cist on the farm of Windyhall, near Rothesay.

Mr Steuart sent the following account of the discovery of the cists and urn in a letter to him by Mr Thomas Hutson :—

“The first cist opened was on the top of the hill, about 400 yards north of the farm-house. There would be about 10 inches or 12 inches of soil above the cover. The length inside about 2 feet 6 inches; breadth, 13 inches; depth, 13 inches; lying north and south. The interior was about half-filled with fine mould and a considerable quantity of small bones. It was of superior construction to the others found, being formed of six flags, those of the end, sides, and bottom of mica slate, but the top cover of freestone. This tomb had evidently been previously opened.

“The second cist opened was about 10 feet westward, lower down, and

the dimensions of the interior would be about 3 feet 6 inches in length, 2 feet wide, and 15 inches deep, covered with a large irregular flag of mica slate. The sides and ends were of the same material, but there was no flag in the bottom. It also lay north and south. The interior was filled with fine mould, at the bottom of which was found an urn and a few bones. The urn was broken when taken out. Adjoining this tomb to the north, with only the end flag between them, was a small one of very rude construction. It was partly oval shaped, and the sides were built with water-worn boulders. The cover was of whinstone, the length about 2 feet by 18 inches in breadth, and 15 inches deep. It was also filled with fine mould, and there were in it a few fragments of very small bone. To all appearance there are or have been many more of these cists in the locality, as the field shows a great many detached pieces of stones similar to those of which they are constructed, and which stone does not belong originally to the locality. The cists are all on the top of a large whinstone dyke that runs east and west throughout the island, the top of which is in a high state of decomposition."

(3.) By W. F. SKENE, LL.D., F.S.A. Scot.

Relic Casket, enamelled, having on one side a cameo representing a female figure with nimbus on the back of a dragon, on the other a miniature painting of a female stabbing herself with a dagger: It was long in the possession of the family of Carruthers of Holmains.

(4.) By THOMAS C. ARCHER, Esq., Director of the Edinburgh Museum of Science and Art.

Two Roman Milestones, of red sandstone, one 2 feet high and 15 inches diameter, with the remains of a defaced inscription; the other 18 inches high and 18 inches diameter. These are deposited for exhibition in the Society's collection.

The following Communications were read:—



## I.

NOTICE OF A NUMBER OF CIRCULAR STONE HUTS, SURROUNDED BY A THICK STONE WALL, ENCLOSING ONE AND A-HALF ACRES, CALLED THE HAREFAULDS, IN LAUDER PARISH, BERWICKSHIRE. BY DAVID MILNE HOME, LL.D., F.S.A. SCOT. (PLATES XXIX.)

All persons now acknowledge the propriety of preserving records of old monuments or other relics, which throw light on the races of people by whom Scotland was inhabited in former times, their pursuits, modes of living, the arts with which they were acquainted, and the physical condition of the country. It is much to be lamented that the perception and acknowledgment of this truth is only of recent date, when so few of these works remain for preservation and study.

"The *Harefaulds*" is one of these works. It is surprising that no account of it should have been published. The only account of it which I have found is in the Transactions of the Berwickshire Naturalists' Club. In August 1870, some of the members of that club met at the place; and in the yearly report given of its doings "*Harefaulds*" is thus referred to:—

"The members who recently saw the excavations at Edin's Hall viewed with great interest this large camp, or ancient British oppidum or town, (referring to the *Harefaulds*). Within the thick wall enclosing the inner area there are cells similar to those in the wall of Edin's Hall. The structure, however, both of the wall and the cells is much ruder. The cells at *Harefaulds* are undoubtedly coeval with the camp."

Happening last October to be visiting the proprietor (the Earl of Lauderdale), on one of whose farms the *Harefaulds* is situated, I availed myself of the opportunity of inspecting it.

It is on the farm of Blythe, in the east end of Lauder parish, on the slope of a hill facing the south. Whenever I reached the spot, it struck me that it was in a situation by no means favourable for a camp, and was quite unlike that usually occupied by the old camps of the country, not being like Edin's Hall, defended by precipices, or similar specialties of ground.

When I got within the precincts, I was greatly shocked at the dilapi-

dated scene which presented itself. The ruins were so promiscuous, that it took me some time before I could make out what had been the original design of the structure.

I may here stop for a moment to explain, how the place had got into its present lamentable condition. After my inspection I wrote to a friend, giving some account of it. My correspondent had known the place almost from childhood, had always taken an interest in it, and had frequently visited it. The answer which I received, informed me, that "up to about seven or eight years ago, the Harefaulds had remained in the condition in which it had been for the previous 100 years, but that then the tenant of the farm pulled down a great portion of the walls, carted away the stones to build them into new dykes, and took the great stone door posts and lintels, some of which were of immense size, to build into new farm offices, where many of them may be seen to this day. Irreparable injury was the consequence; for the Harefaulds then lost most of its circular chambers."

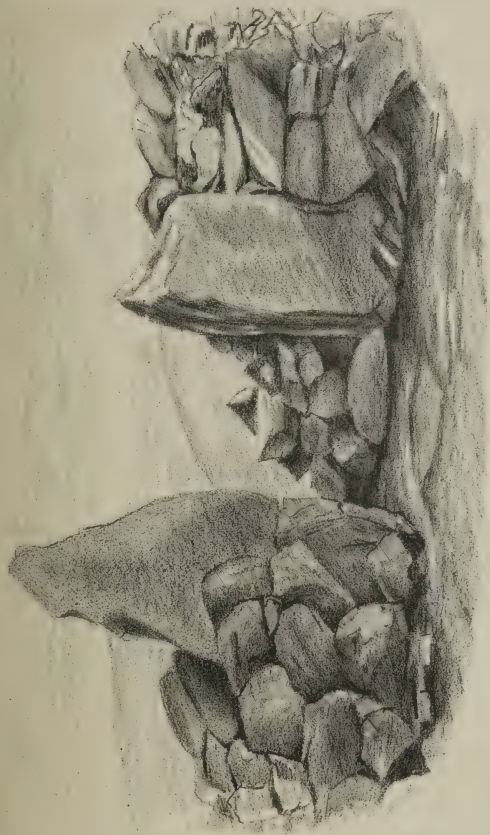
Here it is only fair to the noble proprietor to state that these terrible dilapidations were not only without his knowledge, but in express opposition to his wishes and injunctions; for on succeeding to the Thirlstane estate, some years before they took place, Lord Lauderdale had given directions that all relics of antiquity should be preserved, and especially the Harefaulds. When he discovered what had been done, he expressed much dissatisfaction, and gave still more peremptory orders that not another stone was to be removed.

But notwithstanding the mutilation from which the place has suffered, I am happy to say that enough remains to gratify curiosity, and reward a careful inspection. After examining the spot, and ascertaining its general design, I took some measurements and sketches, which will enable me now to indicate the extent of the place, and at all events, a few of its original features.

The ground plan exhibited will give an idea of what had been the original arrangement of the structure. (See Plate XXIX.)

The longer diameter, running E.N.E. and W.S.W., is 399 feet to the inside of the enclosing walls. The shortest diameter, running N. and S., is about 272 feet. An intermediate diameter, running N.W. and S.E., is about 327 feet. The extent of ground enclosed is about  $1\frac{1}{2}$

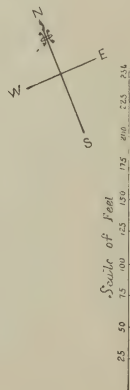
View from inside of Circular Hut, marked A on Plan



View from outside of Circular Hut marked B on Plan



GROUND PLAN OF THE  
HARE FAULTS







acres. It will be seen from these plans that there are two entrances, one on the south, the other on the south-east side. From each entrance there is a track or road way, fully 12 or 14 feet wide, and both entrances appear equally ancient. Within the enclosure, there are the remains of about twenty small buildings, from 8 to 15 feet in diameter. The two most perfect are on the west side, and three or four on the east side. There is also one at or near each entrance. The rest are all ranged along the north side. Most of these small buildings are round in form, and have one opening, as if for a door. They are similar to the numerous circular huts, of which there are vestiges in many other parts of the country, and which have been proved to have been human dwellings. In three of these huts at the Harefaulds, there is a square flat stone projecting from the wall inside of them, of such breadth and position as to suggest the idea that it had been used for a seat.

Lady Warrender, when residing at Spottiswoode with her aunt, Lady John Scott, has frequently visited the Harefaulds, which is about two miles distant from Spottiswoode House. In the course of last summer she was present when Lady John Scott caused some excavations to be made within the walls of these circular huts. Traces of fire were, as she informs me, found in almost all of them; but no other family tokens.

On the occasion of this visit, Lady Warrender, in order to preserve a record of the appearance of the huts, and of the general style of masonry of the place, took some sketches. Having lately seen these, I at once recognised their truthfulness, and begged to be allowed to have copies made on an enlarged scale, so that I might exhibit them in illustration of my paper this evening. She very kindly undertook to make these enlarged drawings herself, and I have now the pleasure of exhibiting what is not only a faithful representation, but a work of high artistic skill. The very sight of these primeval dwellings, so wretchedly small, and so little calculated to exclude either the wind or the cold, makes one shiver at the thought that families of human beings—our own ancestors—should ever have lived in them.

Mr Macdougall, the present tenant of the farm, informed me that some years ago a Spanish coin had been found at the Harefaulds, though in what part I omitted to ascertain. He had lent the coin to the Rev.

Mr Middleton, so I wrote, at his suggestion, for a sight of the coin, and with the coin, Mr Middleton stated, from his reading of the inscription on it, that it was a coin of Philip IV., king of Spain and the Indies, Archduke of Austria, and Duke of Burgundy and Artois—1639.

Mr Middleton goes on to observe, that "The reference on the dollar to *Artois* is explained by the fact that it was not until 1640 that the Netherlands were formally given up by Spain."

Mr Middleton adds, "that it was at this time that money became so scarce in Spain, that copper was declared of equal value with silver—an edict which would have the effect of sending silver immediately out of the country."

The size of the Spanish dollar found in this place is  $1\frac{3}{4}$  inches diameter, and its weight is exactly 1 ounce.

I was at first much surprised at the finding of a Spanish coin in this remote part of the Lammermuir Hills; but on inquiry I learnt that for several centuries, the quantity of Spanish coins circulating in Scotland was not inconsiderable. Thus, in the "Statistical Account of Lauder," it is stated that Spanish coins had been found in different parts of that parish. Also, I may here add, that during the course of last summer Sir David Baird of Newbyth, on the occasion of a visit to the Bass Rock, picked up a silver coin, bearing to have been struck at Grenada in 1591.

Both coins I have shown to Mr George Sim, and, in returning them to me, he states that in two "treasure troves" of coins submitted to him by the Exchequer for examination some years ago, he found a number of Spanish coins. He adds, that even so late as the reign of George III. Spanish dollars were put by our Government into circulation, stamped officially with a small head of George III.

With regard to the wall which surrounded and inclosed the Harefaulds, it varies in thickness. On the south and west it is now only about 4 feet thick. On the north-east side it measures 12 feet in thickness. On the north and north-west it seems to have been even thicker. It is in this thickest part of the wall that there are one or two curious recesses or cells, which are probably those referred to in the extract I have given from the Berwickshire Club Proceedings. But these cells are much Warrender that traces of the embankment are still visible in the Spottis-

smaller than the recesses in the walls of Edin's Hall, and totally unlike in shape. The ground outside of the Harefaulds is rough, rocky, and steep on the south-west and west sides, and on the west side, within half a mile, there flows the stream called Blythe Water. The ground on the north rises above the level of the Harefaulds. Towards the east and south-east the land slopes down gently from the Harefaulds.

It is quite apparent from the nature of the ground, as well as from the structure itself, that the place was not intended as a camp, meaning thereby a place of military strength or occupation. It more probably was a small town or village of peaceful inhabitants, who agreed to live near one another for social enjoyment and mutual protection, at a time when there was no law, and at all events, no government to enforce law, in the country. The object of the wall which surrounded these dwellings would also probably be, to add to the safety of the inhabitants, and aid in the keeping of cattle.

It is proper to mention that close to the Harefaulds there are two copious springs of water. One is situated about 250 yards to the south. It is now no longer visible; for being situated on land capable of being cropped, the present tenant drained the land, and ploughed it up. The spring now does not rise to the surface. He told me that he had found at it the remains of a tank or reservoir, the bottom and sides of which had been formed with round pebbles cemented together. He also found some bits of tin, which, he supposed, were portions of an old pipe, or a ladle for lifting water.

The other spring I myself discovered. It is situated about 300 or 400 yards to the eastward, and near the line of one of the tracks leading to the Harefaulds.

In connection with this place, I must allude to a very old artificial mound or embankment, called "Herriot's Dyke," mentioned by Chalmers in his "Caledonia," and also in the statistical accounts of the parish. It is supposed to have been erected by the Romanised *Ottadini*. Perhaps this dyke was not intended to be a military work; it may only have been a boundary fence, separating one large district of country from another. This embankment, Chalmers says, had been, shortly before he wrote, traced for fourteen miles, running in a south-east direction through the parishes of Westruther and Greenlaw; and I understand from Lady

woode Plantations as well as on the muir north of the town of Greenlaw.

When I visited Harefaulds, I saw the traces of what had been evidently a mound, composed partly of earth, and partly of large stones. It runs in a south-easterly direction, and goes right up into the Harefaulds. It is also a curious circumstance that the two entrances in the outer wall of the Harefaulds are on each side of this old embankment.

How the whole area within the massive walls was occupied must be matter of conjecture. I understand that no excavations have yet been made except within the huts. Perhaps if the rest of the ground within the walls were trenched some discoveries would be made, calculated to afford information.

At Linhope, on the Cheviots, where, a few years ago, a cluster of circular huts was discovered surrounded by a wall, there were enclosures not far off, the area of which seemed to have been used, either for gardens, or more probably for folding cattle in. It is not at all unlikely that the space within the Harefaulds not occupied by the huts may, in like manner, have been devoted to the gathering of cattle at night, or feeding them during the storms of winter; and this supposition is strengthened by the traces of walls which seem to have divided the area into two spaces corresponding with the two entrances. Sometimes the name given to a place had some reference to the use it was put to, or to its local position. The word "Harefaulds," in its terminating syllable, suggests that it was a place where something was "*faulded*," and the first syllable, by most archaeologists, is thought to indicate a boundary. There are hundreds of places all through Scotland the names of which have Har or Hare as the first syllable. In the index to the Statistical Account, I see thirty such places; and there are seven in Berwickshire, as, viz., Hare-law, Harcarse, Harden, Hareur, Harper-rig, Hair-Craigs, Harrit.

If any inference is to be drawn from etymology, it would therefore be, that the place received its name because used for the faulding of cattle, and situated at or near the great boundary called Herri's Dyke.

It seems probable that the place continued to be inhabited, down to a late period; inasmuch as the Spanish coin found there was stamped in 1639; and some years must have elapsed before it could have reached the pockets of the inhabitants of Harefaulds.



The situation of this ancient town, on the southern slope of the Lammermuirs, and at a height of about 1000 feet above the sea, is entirely in accordance with what seems to have been the usual place selected by the general population in these early times. The ancient village of Linhope, consisting of a cluster of circular huts and cells in the surrounding walls, is similarly situated on the south slope of the Cheviots, at a height of more than 800 feet above the sea. There are among the Lammermuir Hills, as well as among the Cheviots, traces of very old dwellings at even higher elevations. It is on the sides of these hills that we see many artificial terraces, where crops had been raised; and it is chiefly in these moorland districts, that the stones which were used as trysting places for worship, and sepulture, are most abundant. If the fact be, as these things seem to prove, that the great mass of the population lived on and among the hills, and not in the low country of Berwickshire or Northumberland, the reason is pretty obvious. The low country then abounded in thick forests, and extensive marshes, which, besides obstructing cultivation, and being unhealthy to live in, might enable an enemy to approach without being seen at a distance. On the hill sides, the soil was favourable for cultivation, the air healthy, and a general view of the country for many miles round could be obtained.

If the Harefaulds were, as I suppose it to have been, a small town, there should be some other traces in the neighbourhood, to verify this conclusion. I understand that places of sepulture have been discovered not far off, and also that there are vestiges of so-called Druidical circles. It is very desirable that some account of these should be drawn up, whilst evidence yet remains of their existence.

Perhaps it may not be irrelevant to mention that, since my visit to the Harefaulds, I received from the Rev. Mr Stobbs of Gordon an account of a place near the Harefaulds,—for it bears on the point to which I have just been alluding. The place is about two miles north of the Harefaulds, and on the same range of hills where it is situated. It goes by the name of the “Burrow” or “Barrow Stones.” I should not be surprised if, on farther examination, it proved to be the old Burial place of the Harefaulds. Mr Stobbs says that there are upwards of thirty stones visible, and that doubtless there are others concealed by the turf or moss. These stones are from  $1\frac{1}{2}$  feet to  $2\frac{1}{2}$  feet high, and are all of

red granite or porphyry, being a tough, reddish-grey stone, well known to curlers for hardness, as the Blythe Water stone. They are different from the greywacke rocks which prevail in this immediate district, and must therefore have been brought to this spot, for some special purpose. Mr Stobbs states that the stones are generally flat, and not like the ordinary round-shaped boulders found on the moors; moreover, it appeared to him that they were not lying in a natural position, but had been set up on end.

These stones are described as being on a gently swelling eminence; and in the middle of the group there are traces of what seemed to Mr Stobbs to have been an enclosure 30 yards long by 20 yards wide, with an entrance at the south end. Mr Stobbs states that the tenant of the farm where these stones are, informed him of a tradition that they indicated the interments of persons slain in battle. But it seems to me a more probable conjecture, that the remains rather indicate the existence of a very ancient place of worship, with gravestones surrounding it.

The truth of this conjecture might be easily solved by a few excavations; and if the Society considered such an experiment desirable, I have no doubt that the noble proprietor, on being informed of this fact, would willingly give directions to have diggings made at sight of some competent person.

[Since the foregoing paper was read, a search has been made by Lady John Scott among the Barrow Stones, viz. in August 1872. Lady Warrender informs me that she assisted. To their great disappointment, no discovery was made. Though the upright stones (referred to by Mr Stobbs) had evidently been *placed* there (*i.e.*, were not "earth-fast" stones), there did not appear to have been much, if any, movement of the soil round them.—D. M. H.]

## II.

NOTICE OF TWO PIECES OF ROMAN SCULPTURE FOUND AT ARNIEBOG, DUMBARTONSHIRE, IN JUNE 1868. (WITH PHOTOGRAPHS OF THE SCULPTURES.) BY JOHN BUCHANAN, Esq., LL.D., BANKER, GLASGOW.

The small farm of Arniebog, in the parish of Cumbernauld, Dumbartonshire, about one mile west from Castlereary, is traversed by the line of the Antonine barrier. The great ditch which formed part of that military defence, is at this point in excellent preservation, being 30 feet wide, and

upwards of 12 feet deep. Indeed, one of the best sections left, stretches from Castlereay westward to the Barhill, near the centre of the isthmus between the Clyde and the Forth, embracing about six miles, and the sites of the wall-forts of Castlereay, Westerwood, Croy, and Barhill, along the whole of which distance the fosse is broad, deep, and little injured. In Roman times, an extensive swamp existed outside the barrier, and may have afforded some additional strength to the fortification. It was about two miles long, and its eastern termination was at Arniebog farm. The name was "Dullatur Bog." It was completely drained many years ago. Faint traces existed of what seemed a small *castellum*, or watch-tower, on the line of the barrier at Arniebog farm, perhaps for overlooking the end of the great swamp.

Now, in June 1868, the Arniebog farmer, in trenching a field close to the supposed watch-tower, resolved to root out two large flat stones, which were embedded about one foot under the surface, and had long interfered with his field work. They lay a few feet apart, and about 34 yards from the south or Roman side of the fosse. He found the lowermost faces of both sculptured, and the figures represented occasioned no small degree of local gossip.

Hearing of the discovery, I soon after visited the farm, and recognised on the one stone a representation of Neptune, and on the other, of a captive Briton. (See the accompanying woodcut). Both are well preserved, arising no doubt from the sculptured faces having been lowermost in the soil. On placing the one stone vertically upon the other, Neptune being uppermost, I found that they fitted exactly, and it is obvious that they had formed, unitedly, part of a much larger slab, probably a legionary one, the remainder of which may yet be discovered, if the farmer continued the trenching, now postponed or abandoned.

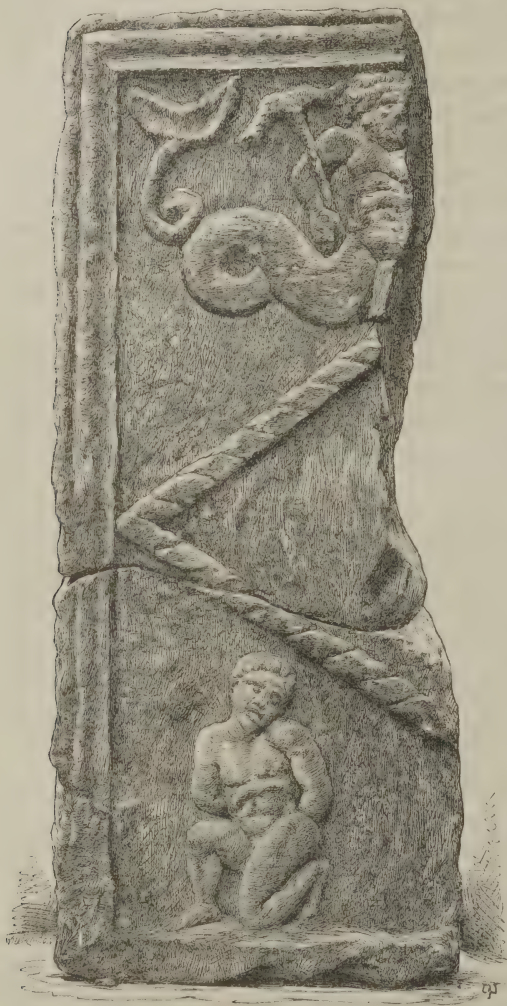
The figure of the captive is particularly interesting, for it affords a portrait, by Roman hands, of a native Briton. He is naked, on one knee, with his arms tied behind his back, as if ready for decapitation. The countenance is that of a young man of about twenty-two years of age; the features not at all savage; the nose good, slightly aquiline; no beard or moustache; the hair rather short, and apparently plaited round the brow; the body plump and muscular; the whole figure exhibiting a strong, well-built man. The head is turned a little to one side, as if to receive on the neck the fatal sword-stroke more effectively.

I need not comment on the Neptune sculpture.

Herewith I send two photographs, taken from the originals. The one

represents the fragments united above each other, from which the general design may be better seen than from description. The dimensions of the originals thus united are 34 vertical inches; breadth of the moulding, 2 inches; and the stones are 7 inches in thickness, formed of the common yellowish sandstone of the district.

The other photograph is an enlarged view of the captive alone, so that his countenance and figure may appear to more advantage. The original figure measures 10 inches. Both sculptures are in *alto relievo*. No letters appear. The style of sculpture resembles that of the era of Lollius Urbicus, judging from other specimens found at different points along the barrier which we



know from inscriptions belong to that period.



The probability is, that the large legionary slab, to which the fragments now described belonged in all likelihood, was broken into pieces by the Romans themselves, and hid in the earth when they finally retreated from the district. That they were accustomed so to hide such objects has been conclusively shown by Dr Bruce of Newcastle, in his interesting description of the discovery close to the great Roman Fort of Maryborough, in Cumberland, two years ago, of no less than sixteen altars, in a series of pits about six feet deep, carefully deposited with the inscriptions lowermost. Similar instances occurred at certain places along the Antonine wall, one in particular at the wall fort of Auchendavie, a few miles west from Arniebog, where four altars by a centurion of the Second Legion, and other Roman objects, were revealed in a pit during the formation of the Forth and Clyde Canal last century, and are represented in Stuart's "Caledonia Romana," plate xi. second edition, 1842.

Assuming that the Arniebog sculptures belong to a legionary slab placed there, but since broken up, and the greater portion lost, the question arises, to which of the three legions engaged in constructing the barrier did this slab belong? Now, various circumstances seem to indicate the Second Legion, *Augusta*.

The design and style of the sculptured fragments closely resemble those on other margins of slabs extant, and known from their inscriptions to have been set up by that particular legion at different places along the barrier. One leading feature in their marginal sculptures was a predilection for representing human figures and animals. The other two legions, the Sixth and Twentieth, seldom, if ever, did this. *Their* margins are generally very plain, the Sixth Legion particularly so. Examples of the contrasts among the three may be seen by consulting "Caledonia Romana." In short, the sculptures connected with the Second Legion were more demonstrative in regard to *marginal* objects than those of the other two.

But more particularly, the artist of *Legio Secunda* had a fancy for representing naked captives. Of this, two remarkable examples exist. Both are slabs by vexillations of that corps, found, widely separate, at opposite ends of the wall. The first was discovered many years ago at the small wall fort of Castlehill, Dumbartonshire, near the Clyde. It has two sculptured margins, with the inscription between. On the *left*

margin appear two natives in the foreground, naked, with their arms tied behind their backs. One is sitting, the other is on one knee, just as at Arniebog. Between them lies a poniard. Behind is a Roman cavalry soldier, armed with shield and spear, the latter of which he is brandishing ; while in the rear is a priest in his robes, holding a *patera*. On the right margin, a third native is in a sitting posture, naked and bound, as in the other instance. Above him is a marine creature like a seal, and behind, an eagle flapping his wings. The whole seems to symbolise a defeat and capture of natives, with an intended commemorative sacrifice. This interesting slab is in the College of Glasgow, and represented in "Caledonia Romana," second edition, plate ix. fig. 1.

The other slab is the very fine one in the Society's possession, discovered in the same year as the Arniebog fragments, on the property of Mr Caddell, at Bridgeness, Linlithgowshire, near Carriden, the supposed eastern termination of the wall. This slab has also two sculptured margins very elaborately executed, with the inscription, as usual, between. The *left* margin represents, in the foreground, a group of four captives, one of whom is a woman. All are naked. Behind is a Roman soldier on a stallion, fully armed, with helmet, shield, and brandishing a spear. He is galloping among, and slaying, the captives. One has been decapitated, the head lying beside the body ; a second has been thrown on his back with his feet in the air ; a third has been knocked partially down, and is trying to recover himself. The female is sitting with her hands screening her bosom and person. On the right margin is a very curious and interesting representation of a solemn sacrifice, including figures of robed priests, and animals in charge of an attendant playing on the double-pipe. (See Proceedings, vol. viii. plate vii.)

The same general idea of captives and a sacrifice seems to have actuated the sculptors of both the Castlehill and Carriden legionary slabs. Now, compare these with the Arniebog stones, part of a supposed *left* margin, and observe that it is on the *left* margins in all the three that the naked captives chiefly appear.

The artist of the Second Legion seems to have been partial to the representation of *marine* creatures. Thus, on two of their slabs in Glasgow College, found near Castlehill, and on the Castlehill slab itself, are figures of what appear to be seals or capricorns.—*Vide* "Caledonia Romana,"

second edition, plate viii. figs. 1 and 6; also plate ix. fig. 1. No marine objects, however, appear on any of the slabs of the other two legions. *That* idea seems to have been confined to the *Legio Augusta*. Now, on the Arniebog fragment, the marine deity Neptune is represented. He is placed uppermost, and this uppermost position occurs on all the three slabs at and near Castlehill, last referred to.

The *presence* of the Second Legion close to Arniebog is distinctly proved. Thus, at the great wall fort of Castlecarey, which is about a Roman mile only from Arniebog farm, *per lineam valli*, an altar was found, now in Glasgow College, dedicated to Fortune, by vexillations of the Second and Sixth Legions respectively. This goes to show that the Second Legion was actually in the immediate vicinity of the spot where the fragments were found, and thus had the opportunity of setting up there, the supposed, but now missing slab. No doubt, this altar also proves the presence at the same time of the Sixth Legion at Castlecarey. But the altar was not, as the legionary slabs were, intended to be a lapidary record of the quantity of work done, and by a particular corps. Moreover, from what has been already said, the style of the Arniebog marginal sculpture is by far too exuberantly demonstrative to have been executed by the Sixth Legion, whose general slab-style was tame and unimpressive.

There are reasons for conjecturing that for about eight miles westward from Arniebog, viz., from the vicinity of the large wall fort of Auchendavie, eastward, the barrier was constructed by alternate detachments of Legions Second and Sixth; the westmost and the eastmost sub-divisions of that eight-mile section being probably executed by working parties of the former, and the centre portion by a vexillation of the latter. For, in the first place, there is undoubted evidence that a strong detachment of the Second Legion was posted at Auchendavie, by the discovery there, already referred to, of several inscribed altars, in a pit, dedicated to various deities by one of their centurions. The situation of this fort is on level ground, and had thus no natural protection. Therefore, it was one of the largest on the line, with triple ramparts and ditches, and consequently garrisoned by a large body of troops. *Catapultæ* had been placed on the ramparts to defend the fort, as indicated by a number of stone-bullets about the shape and size of a melon, found within the area of the fort, evidently part of the ammunition to be discharged against an enemy by these

military engines.<sup>1</sup> In the second place, at this point of the barrier, a large section of it running *westward* was executed by another legion altogether, viz., the Twentieth, as proved by one of their slabs discovered a short distance west from Auchendavie, at a small farm called Easter-Mains, whereof a representation appears in "Caledonia Romana," plate x. fig. 4. This shows that the work which the Second Legion at Auchendavie had to perform must have been *not westward*, but *eastward*, in the direction of Arniebog and Castlecarey. In the third place, the usual length of the work done all along the line by the vexillations of each of the three legions, was from three to four Roman miles of 1000 paces, besides fractions. Now, this would lead the working party from Auchendavie eastward till near the small wall station at Upper Croy, and it might therefore have been expected that a legionary slab by the Second Legion detachment, recording the quantity of work done, would have been found thereabouts. It is a remarkable circumstance, however, that the legionary slabs which had been discovered pretty regularly near the ends of the three and four miles-sections, from the brink of Clyde eastward to near Auchendavie, suddenly cease there, and until the very recent turn-up of the Carriden stone, no Roman legionary slabs recording work have been met with, from Auchendavie eastward, till the very eastmost termination of the barrier. Altars chiefly, only. But I venture to think that a piece of such a slab did come to light near Croy, although it has not hitherto been recognised as of that character. Soon after leaving Auchendavie, the range of the wall ascended, and for several miles was conducted along a high and rocky district, in some places quite precipitous. This was its character all the way to Croy. It was in this difficult region, I think, that the Sixth Legion came to take their share of the heavy work; and, accordingly, their presence at Croy is shown by altars. Now, in the beginning of the present century, there was discovered at the bottom of one of the precipices near

<sup>1</sup> I beg to send herewith impressions in wax, from a Roman intaglio in my possession, picked up beside the bullets in the text. It is composed of a piece of *lapis lazuli*, oval in shape, and of a deep azure blue colour. On it is incised the figure of a naked man standing at an altar, from which the flame ascends. He holds in one hand a *patena*, and in the other a small branch or a bunch of grapes. Perhaps it had been the stone of a finger-ring belonging to a Roman officer, from which ring it had accidentally fallen. It is in good preservation, as the impressions show.



Croy, under a mass of rubbish and rock-splinters, a well executed piece of Roman sculpture, which I am of opinion formed part of a legionary slab, and, curiously enough, a *left margin* too, just as at Arniebog. This sculptured fragment is represented in "Caledonia Romana," plate xiii. fig. 1. A nude female figure appears; and another, also naked, apparently a male captive, is on one knee, in a crouching posture, with an expression of suffering, and looking upwards, as if in dread of a coming blow. A broad wreath of laurel is partially shown, under which the captive is lying. This wreath has a close resemblance to one on a fine piece of sculpture well preserved, built into the front wall of Cadder House, the inscription on which records that it was made by the Second Legion.—*Vide* "Caledonia Romana," plate x. fig. 1. Compare the workmanship of this Cadder slab with the Croy fragment, and the style will appear almost identical. Unfortunately, the rest of the Croy sculpture is lost. There is an ornamented pillar outside, resembling that on the Carriden stone. Here, the same dominant idea prevails, of a naked prostrate foe, which actuated the sculptor of the Second Legion, at, and near, Castlehill and Carriden, as well as at Arniebog. This interesting bit of sculpture, found, as I have stated, under a mass of rubbish, was very likely thrown over the precipice when the slab, of which it probably formed part, was broken up. There is no mistaking the style and character of the workmanship of this fragment. Both seem to indicate the *Legio Secunda*, and it may not unreasonably be assumed that this supposed slab was set up to record the extent of work *they* had done from Auchendavie to this point. That the work must have been very laborious, is obvious from the mass of trap-rock which they had to encounter; and silent corroborative witnesses survive in two ponderous iron hammers, very much battered with hard usage, which were found at Auchendavie, in the altar-pit before referred to.

Then, with regard to the central portion, conjectured to have been executed by the Sixth Legion, eastward from the point where the Second left off, *it*, too, must have been heavy work. The trap, there, is peculiarly tenacious, as tested by the contractors in recent times, while cutting the railway through, at Croy station. In fact, two miles of the barrier, executed at Croy would be equal, in point of labour and time, to double that length through soft ground.<sup>1</sup> The probability, therefore, is, that a

<sup>1</sup> I can personally testify that this Croy section presents more difficulties for

shorter section among the trap-rocks was assigned to the Sixth detachment than usual (perhaps only two miles), and the remaining eastmost portion of the eight-mile section was proceeded with, by vexillations of the Second Legion, till they finished at or near the spot at Arniebog, where they placed the next record of their work, the fragments of which are now under consideration.

It has been stated, that no legionary slabs have been found farther east than about Auchendavie, except the one at Carriden. But it is proper to state, that one slab, by the First Cohort of Tungrians, was discovered within the area of the Castlereay wall fort, recording that they had made one mile of the barrier. But this is not a legionary slab, in the proper sense of the term, which applies only to slabs by soldiers of a Roman legion, whereas the Tungrians were merely auxiliaries. This is the only instance known of work done on the line by other than Roman troops, although there is little doubt auxiliaries lent some aid. The quantity of work performed, too, by this Tungrian Cohort is unprecedentedly small, only, one mile. There is no instance recorded of any of the legion-detachments executing such a very short distance. There must have been some peculiar reason for causing the Tungrians to construct this diminutive portion. I have said that Arniebog farm is just about one mile west from the Castlereay great fort, in which we have seen were quartered at the same time two detachments of the Second and Sixth Legions, as well as these Tungrians. Now, could the *one mile* done by the Tungrians, and commemorated on their slab, have been *the mile* between the point where the Second Legion finished and *left off* their work at Arniebog, where the sculptured fragments were found, and Castlereay fort; and may it have been the case that the short one-mile gap thus left had been ordered to be executed by the Tungrians, by way of relief to the legionary detachments, which had done so much hard work in, and about, the Croy district?

Finally, bringing all the foregoing circumstances and reasons to bear on the question, to which Legion did the Arniebog fragments belong?

trench work than any other point of the barrier, for I have twice walked along the whole line, from sea to sea, on one of these occasions in company with the lamented author of "Caledonia Romana," when he was engaged writing that volume, and I noted the peculiar physical obstacles in the Croy district, and the immense labour which the formation of the fosse must have cost the soldiers there.

perhaps it is not an overstrained inference, that these were chiselled by an artist connected with the *Legio Secunda, Augusta*.

NOTE.—It is much to be regretted, that the Arniebog fragments are exposed to the risk of being destroyed. Notwithstanding repeated and urgent applications to the nobleman, guardian to the minor-owner of the farm, to have these interesting relics deposited in a public institution, where their preservation would be ensured, and the sculptures rendered accessible to archæologists and others, they have been allowed to lie uncared for, in an outhouse at Arniebog, liable to rude handling, which indeed has already caused damage. The stone of which they are composed is sandy and soft, and will not stand any thing but gentle usage. An accidental fall would split the sculptures into pieces.

### III.

NOTICE OF THE FABRIC OF ST VIGEANS CHURCH, FORFARSHIRE ;  
WITH NOTICE AND PHOTOGRAPHS OF EARLY SCULPTURED STONES  
RECENTLY DISCOVERED THERE, &c. BY THE REV. WILLIAM DUKE,  
M.A., F.S.A. SCOT. (PLATES XXXI.—XXXIV.)

The origin of the Church of St Vigan of Aberbrothock is lost in remote antiquity. It is probably due to one of those preachers of Christianity who, issuing from Ireland or Iona, overspread Scotland in the sixth and seventh centuries, establishing churches wherever they succeeded in making converts. The name lends some countenance to this supposition. There is a tradition, indeed, that St Vigan was a local saint; and the foundations of a chapel, reputed to be his, are still to be seen at Grange of Canon. More probably the church is one of several that he, or some follower of his, planted in the course of his missionary labours, and that afterwards received his name. Ecclefechan appears to be the only other dedication to him in Scotland. Dr Stuart has identified him with St Fechin of Fohbar in Ireland, who died A.D. 664, Viganus being merely a Latinized form of his name. His festival was celebrated annually on the 20th of January, on which day a fair, termed St Vigan's Market, continued to be held in the parish till the early part of last

century. The church retained its local name of Aberbrothock till the erection of the town portion of the parish into a separate charge after the Reformation ; but the name of the saint was associated with it at least as early as the foundation of the Abbey by King William the Lion.

The valley of the Brothock, in which the church stands, affords traces of very early inhabitants. Many primitive graves have been laid open in the course of railway excavations and agricultural improvements, and bronze weapons and ornaments have been found. A curiously incised stone, removed from the base course of an underground *bee-hive* house, a mile and a-half above the church is now deposited in your Museum. The excavation of a similar house, and other underground chambers in another district of the parish—the immediate neighbourhood of St Vigian's chapel—is described by Mr Jervise in the fourth volume of your Proceedings ; and there are traditions of earlier discoveries of a similar kind, of which probably no record has been preserved.

The church is picturesquely situated on the top of a conical mount, close by the Brothock, at a point where that little stream receives a tributary on either bank, about a mile and a half from the sea. The level space at the top measures about 80 feet from west to east, and 130 from north to south. In the former direction it is fully occupied by the church, there being a steep descent at both ends. A small level space on the north and south, and the sloping banks of the mount, form the churchyard. The whole has something of an artificial look, but is in reality one of a succession of natural mounds and kaims that occur in the valley of the Brothock, all of which have their longer axis running north and south, in a direction parallel with its course. Its central as well as picturesque situation, its convenient size, and its possession of a soil well adapted for sepulture, no doubt combined to determine the selection of the site.

The first church, supposing it to have been founded by the saint himself, or one of his immediate followers, would naturally be constructed of such materials as came first to hand. It would be succeeded in due time by a more permanent erection ; but it may be assumed that, for a period of four or five centuries, the successive churches that occupied the site were all alike rude and undecorated. No remains of the fabric of the church during the Celtic period can now be identified. The sepulchral monuments



belonging to it however are unusually numerous, and prove it to have been a religious site of the first importance in the district.

A Norman restoration took place at St Vigeans as in many other parts of the country, but, judging from the remains, the ornamental work could hardly have been very extensive. Probably it was confined to the doorway and windows. Three stones, with finely executed mouldings of the purest Norman, forming portions of two orders of an arch, were lately recovered from a fifteenth century wall in which they had been built. Their date may be fixed within the first half of the twelfth century, forty or fifty years before the foundation of the Abbey. There are no stones belonging to the latter of similar character. Probably there are none in Angus, but their exact counterparts may be seen in such purely Norman churches as those of Leuchars and Dalmeny.

There was found at the same time a thin oblong slab, probably sepulchral, on which is sculptured a large staff, surrounded by a border of characteristic Norman work in two patterns, both of which occur on the arch stones.

The earlier churches were all of small extent, and must have occupied the northern portion of the site. The Norman church seems to have been extended to the verge of the precipitous bank on the east, over what had previously been a portion of the churchyard. The east gable of the north aisle is almost certainly a remnant of this church. The character of its masonry accords well with the Norman period, and it can be shown to have been an old wall in 1242. Originally it formed the northern half of the east gable, at a time when the church had no aisles. Its southern half, transformed into a portion of the gable of the later nave, was removed last year to admit of the erection of an apse. In respect both of material and workmanship, it is vastly superior to any other portion of the fabric that has come down to our times. The line of junction between it and its later and much inferior continuation to the south was distinctly marked. Having been founded, like most of the ancient walls, near the surface of the ground, there was occasion to underpin it, when it was seen to have been built over graves. It is also worthy of remark, as showing how soon ancient monuments began to be utilized, that a small sculptured cross of exquisite workmanship, was found embedded in its lowest course.

The west gable of the same aisle is composed of similar materials, in which a blue stone, found in no other part of the fabric, predominates. Part of the face work of this gable, however, had been renewed a century or two ago, and the remainder of it during the present restoration.

The west, north, and east walls of the north aisle formed the limits of this church in these directions. The south wall stood near the centre of the present nave. It measured 60 by about 26 or 27 feet over walls, the walls being three feet thick, and was spanned by one roof. The nature of the site did not admit of its being extended so far east and west as was usual in less important churches; and hence the reason that, though in subsequent times twice widened, receiving the addition first of a north, and afterwards of a south aisle, it came down to our day without the more usual appendage of a chancel.

The earliest known documents in which the church is mentioned are confirmations<sup>1</sup> by several successive bishops of St Andrews, and popes, and by King William himself, of various grants to the great monastery which the king had founded in the parish. In these the whole shire of Aberbrothock, including the parish church and all its belongings, are mentioned as forming part of the endowment. The first of them, that by Bishop Hugh, dates from about 1178, the year in which the first abbot was formally installed. Henceforth, till the Reformation, the parish church was a dependency of the Abbey. A stipendiary vicar served the cure, while the great tithes, as well as the rents of the land, swelled the revenue of the monastery.

The year 1242 is the next date of importance in the history of the church. It was then solemnly dedicated on the 19th of August by Bishop David Bernhame of St Andrews, to whose diocese it belonged. The fact of a consecration usually implies a previous rebuilding or enlargement; but this bishop's consecrations are so numerous, as to preclude the idea that, even in that church-building age, all the churches on his list had been recently renewed, or even repaired. Rather, it would seem, the consecration of churches was now deemed of more importance than at an earlier period; and there being no record of previous consecrations, probably a well-founded suspicion that many churches had never been canonically consecrated, the bishop determined to consecrate them all, in

<sup>1</sup> Registrum Vetus de Aberbrothock.

order to make sure. We may suppose that a prelate, distinguished by so much zeal for the work, would take care that the memory of his own consecrations should be preserved. A list of them was brought to light by the late Mr Joseph Robertson, and at St Vigeans the fact is recorded in stone. Of the twelve dedication crosses, usually cut on a mediæval church, as many as seven are still on the walls, five of them in their original position. An eighth and ninth that had been displaced were brought to light during the present restoration. But, though a previous rebuilding or extension is not necessarily to be inferred from Bishop David's consecration, it is certain that a great change had been made on the church since we last saw it in Norman times. It now consisted of a nave and north aisle, of the same dimensions as these portions of the fabric are at present, and composed largely of the same walls. The south wall of the earlier church had been removed, the gables widened and raised, the north arcade inserted, and a new south wall built where the south arcade now stands. It was possible to determine these changes with the greatest certainty during the progress of the works last summer. The east respond of the north arcade having been injured by the excavation for the chancel pier, both it and a portion of the wall above were taken down, when they were found to have been built on to the older gable, without so much as the plaster of the latter having been removed. A narrow perpendicular recess, that had previously existed in the east wall, had been built up to present a solid surface to the respond, only the capital of which was bonded into the wall, a hole having obviously been cut out for the purpose. At the same time a continuous foundation, traced along the site of the south arcade, bore testimony to the former existence of a south wall. The north arcade thus inserted, consisting of four bays, with short, massive round pillars and circular arches, might pass for undecorated Norman, but is really of a style that was used in Scottish parochial churches for several centuries after that period. The capitals, however, are of an early form, simple, yet possessed of great character. The wall above is pierced with three quaint clerestory windows of unusually small size, and nearly square. Whether they are as old as the arcade seems doubtful. There can be little doubt, however, that the church was remodelled in this form not long before 1242. The soffit of the arch immediately over the respond

at either end of the arcade and the corner of the earlier gable, are alike marked by the consecration cross. The south arcade, which is of a much later style, has no such marks.

A reason for the enlargement of the church at this time is not far to seek. Having been strongly built only a century before, it is not likely to have become ruinous. But, in the meantime, the monastery had been erected. Its great church had been consecrated on its completion in 1233, only nine years before. Such a great and wealthy establishment must have attracted to the parish a host of craftsmen, farmers, and other dependents, too numerous to be accommodated in the little church that had sufficed for the scanty population of the previous century. Whether its characteristic Norman features were then obliterated, or preserved till a later period, does not appear. Probably they were preserved or reconstructed. They may even have determined the character of the Norman-like arcade.

When this church was finished, there was as yet no tower at St Vigeans. The west gable was completed without reference to the latter, its outside intake and splayed course, and a higher and lower skew-line, being still visible within the tower. This addition, however, may have been made not long afterwards. It appears not only to have existed in 1485, but to have had important alterations made on it at or before that date. No needless expense was incurred in its erection. Three walls were built and attached without bond to the gable of the church, which was made to serve for the fourth. The line of its south wall was probably determined by the existing south wall of the nave.

Only the two lower stories, or the portion below the second intake, can be affirmed to belong to the original structure. One or two additional stories, surmounted by a saddleback roof, probably completed the design. It is impossible now to determine the character of the windows at the top, if any existed; but the lower stories, narrow, unbuttressed, and tapering upwards in unequal stages, bear a considerable resemblance to the Romanesque towers at Muthill and Dunning, in the neighbouring county of Perth.

The church that was consecrated in 1242 seems to have come down to 1485, with little alteration beyond the addition of the tower. On the 25th day of August in that year it was again dedicated,<sup>1</sup> along with two

<sup>1</sup> *Registrum Nigrum*, pp. 226, 366.



great altars, and the cemetery by George O'Brien, bishop of Dromore, acting no doubt for the bishop of St Andrews, after another extension which brought it to the form it retained till the present century. The dedication was promoted by John Brown, tenant under the Abbey, first in Letham, and afterwards in Wardmill and Cellarer's Croft. He was the founder of the altar of St Sebastian,<sup>1</sup> one of the two that were dedicated, the other being no doubt that of the Patron Saint; and in a deed of endowment executed by him in 1506, he incidentally mentions that the church had just been completed at the time of its consecration. The particular works that were then executed are not specified, but with the knowledge we have of the earlier fabric, they are hardly doubtful. The roof probably required renewal, and after two centuries more accommodation must have been necessary. At all events, the south wall of the nave was taken down, an arcade built on its site, and a south aisle formed to correspond with that on the north. This extension, like the two former, was made over a portion of the churchyard that was full of graves. Little care was taken to set the pillars exactly opposite, or to have the two arcades parallel. Nor had any two of the arches on either side the same span, the difference between the extremes being more than two feet. The later arcade differs from the earlier in most of its details. It is built of stones from another quarry. Its pillars are octagonal instead of round. The bases, capitals, and arches are all distinguished by well-marked features of a flamboyant character; and the clerestory consists of eight windows taller than the three on the north, and having segmental instead of horizontal lintels. Its whole style corresponds well with the date of the second consecration, A.D. 1485.

With persistent irregularity the south aisle was made about twelve inches narrower than the north. Both are now about a foot wider than they were originally. The north aisle gable bears marks, at its inside corner, of the north wall having been thinned to that extent. The thinning must have been done in comparatively recent times when the wall was rebuilt, the chisel having been applied only to the portion bonded

<sup>1</sup> St Sebastian's day is undoubtedly the 20th of January. Is St Vigian's day really the same, or has St Sebastian's been wrongly assigned to him? If both festivals are on the same day, may not this circumstance have suggested the foundation of an altar to St Sebastian.

into the gable. All the more ancient walls were 3 feet thick. The south aisle wall was never more than about 30 inches. It had been rebuilt above the ground level at the same time as the corresponding wall on the north side of the church, but its original lower part still remains projecting 10 inches beneath the floor.

Internally, the north aisle measured 11, the nave 22, and the south aisle about 10 feet in width, exclusive of the arcades, each 30 inches thick. The length continued to be determined by that of the older church.

The south arcade has no consecration crosses. The insertion into the new corners of two or three of the marked stones, necessarily removed from the old, seems to have been considered sufficient to mark the rededication of the church. One of these is still to be seen in its later position at the south-east corner.

The alteration made on the tower at this date was the rebuilding and thickening of the walls above the second intake. The latter was now omitted altogether on the south side. Its previous existence there, as well as on the west and north, is vouched for by the existence of several feet of the original south-east corner higher up, embedded several inches within the face of the later wall, and now again concealed by the clerestory. On the west and north the thickening was done at different levels, by the insertion of corbels, spanned by oak lintels, to support the inner face. This was obviously subsidiary to the erection of a parapet and bartizan on three sides, which entered into the new design for the roof. The east wall was not thickened, as it was meant to be terminated by a gable; but at a later period a parapet was added on this side also, at a somewhat higher level, and in an inferior style. The saddle-back roof and parapet, after various alterations made on them in the seventeenth and eighteenth centuries, to fit them for the reception of a bell, existed within the memory of persons still alive; and the corbels, as well as floor of the bartizan, remained in their original position till last year. The whole upper portion of the tower appears to have been an imitation on a smaller scale, and in an inferior style, of the donjon tower of the Abbey, which dates from an earlier part of the same century. More particularly, the arrangement of the corbels and all above was the same in both.

The idea of forming the principal entrance—probably an entrance of

any kind—into the church through the base of the tower, seems to have been an afterthought. The tower is not much more than half the width of the nave, and, standing at its south-west corner, the large entrance opened through the gable of the latter is necessarily off the centre. It is not even in the centre of the tower, having been made close to its north wall, obviously to improve its position as regards the church. Both the outer doorway and the larger entrance through the old gable received the characteristic circular arch. The place where the gable had been slapped, and a portion of the splayed course at the intake removed for this purpose, is distinctly visible in the chamber above the porch. This entrance was probably opened up in 1485. The rude stone vaulting of the porch was certainly formed some time after the tower was built, as is evidenced by the existence of window rybets on the north side, in the space now occupied by the vaulting. The original lights of the ordinary turret kind are still to be seen on three sides of the second story. The doorway into this story, through the south wall, bears the appearance of considerable antiquity.

The position of all the doors and windows of the church, as completed in 1485, cannot be fixed with certainty. The principal entrance through the tower and the clerestory windows were the same as at present, as were probably the doors in the north and south aisles. There was also a narrow light in the west gable of the south aisle, of the same character as those in the second story of the tower, but ragged for glass. There never was a window of any kind in the east end, nor were there any in the north aisle till the present century. There was probably a second door and several windows in the south aisle wall; but the church must have been largely dependent for what light it had upon its clerestory. Most Scotch parish churches, built so recently as the first quarter of the present century, are as destitute as it was of windows to the north.

The altar platform at the east end, on which the bases of the responds rested, stood ten or twelve inches above the floor, and extended quite across the nave. Over it, in the gable near the north respond, was a recess formed of Arbroath pavement, with moulded edge and ogee arch. There was besides, a little lower in the wall, a square recess of rude construction near each end of the altar; also two smaller recesses, one above the other, close to the north respond, of precisely the same nature as those still to

be seen in the ruined gable of the old church of Ethie. There were no remains of a piscina, though one had no doubt existed in the original south wall of the nave.

The church having been completed and put into a state of thorough repair in 1485, may be supposed to have come down to the period of the Reformation in a fairly good condition. Nothing seems to be known about it for a century after that event, except that it was always in use for public worship. The earliest Session record, which begins in 1665, contains notices of many small repairs. One of greater importance was executed in 1676. Under date December 9th of that year is the following entry :—"As also ye church fabrick being now compleited and glass windows put in for ye preventing of any harme to be done yrt to the doors of the whole church and steiple be kept closs and ye keyes be brought on the Sabath into ye mnrs. in order to ye act of ye late visitation." The reference is to a visitation of the church by the Archbishop of St Andrews in the previous July, shortly before which the heritors had agreed to execute some repairs. These, however, must have been far from thorough, as there are notices of others in immediately succeeding years. On May 29th, 1681 :—"Ye Mnr. declares yt ye bell of this church is very insignificant for such a considerable paroch as this is, and yt it hase been frequently suggested to him yt ye people will almost willingly contribute for ye payt. of a better bell." The heritors and Session thereupon "give commission and warrand to ye mnr. to cause bring home a bell sufficient for ye service, and ye old bell to be sold to help to pay ye new;" and to "have a roll recorded of what each gentleman heritor, husbandmen, cottars and fials, male and female, will give for such a necessary work."

The acquisition of a larger bell seems to have rendered necessary the erection of a wooden bell-house at the top of the tower, there being no belfry windows in the tower itself. The entry relating to it is dated August 17th 1687 :—"52s. payed for meat and drink to ye men yt built ye bell house. 13 lib. 7s. 8d. payed for timber to ye bell-house. 3 libs. to ye smith for Iron work: 1 lib. 6s. to Tho. Dall for his service."

In 1689 there is a notice of "the church and steeple head" having been repaired. Many other entries of a similar nature show that during the whole period covered by this record, extending from 1665 to 1694,



the church was in a state of chronic disrepair. A crisis was reached in 1720, when it was visited by the Presbytery, and found to be "in a ruinous condition," requiring an expenditure of L.474, 16s. Scots. The repairs needed are not specified, but among them was probably the rebuilding of the walls of the north and south aisles. The ancient incised stone representing various animals may have been first built into the north-west corner at this date, if not in the preceding century.

The Presbytery again visited St Vigean's in 1754, on petition by the Reverend John Aitkin, who declared that "the church was ruinous except the walls." A sum of L.634, 19s. Scots was found necessary on this occasion, nearly the whole of which was required for the wood and slater work of the roof. These repairs, however, were not effected for some years, till the legal liability of the heritors was established. The roof then erected was removed last summer in an advanced stage of decay.

From a comparatively early period lofts had existed across the west end, and in front of the second arch on the north side of the nave, access to which was obtained by a door through the west gable at north side of tower, opening upon an inside stair. The east loft was built in 1770, at a total cost of L.29, 6d. sterling, and access to it obtained by means of an outside stair and door through the gable. In the following year the minister got permission from the Earl of Northesk—the only heritor interested—to build up the door and remove the stair of the west loft, and open a new entrance from the second story of the tower. The unsightly excrescence from this loft in front of the second arch of the nave must have been removed before this improvement.

In 1772 the minister was authorised to get the belfry, which is described as being in a very ruinous condition, repaired, and at the same time "to put in three sky-lights into the north aisle for the use of those who sit there"—a plain intimation that there were no windows in its walls. This aisle had been little occupied up to this time, and its area was only partially seated. Two burial vaults are said to have abutted on its north wall. The more easterly, in which James VI.'s tutor—Sir Peter Young of Seaton—was buried, remained till 1827, when it was brought within the limits of the church by the extension of the north aisle. Its underground portion was finally abolished when the floor was levelled last summer.

In 1773 the vaulted porch under the tower, which had long served for a session-house, the lower portion of its outer door having been built up, and its arched head turned into a window, was for the first time plastered.

The large bell got in 1681 had been repeatedly recast, and there are many curious notices respecting it. In 1813 it was again rent, and the heritors agreed "that a new bell should be provided, and that some kind of spire should be erected on the top of the steeple for its protection;" but though the plan of a small stone tower was unanimously adopted at a subsequent meeting, it was as unanimously dropped at a following one, and "the old steeple" appointed "to be repaired, and a new bell to be purchased and put into the old belfry, if sufficient." Nothing, however, was done till 1822, when new plans were brought forward, and it was agreed to expend L.164 sterling in improving the church and tower. A porch was formed at either end of the south aisle, its windows enlarged, and the outside stairs protected by a roof. The sum of L.30, included in the above, and an additional sum of L.14, were spent in adding the bell-house at the top of the tower and providing the bell.

In 1827 the roof of the old north aisle was renewed, and a new north aisle built at a cost of L.134, 10s., the wall of the old aisle having been opened up for a space of 26 feet opposite the two central arches of the nave. The new aisle measured internally 26 by 16 feet. Its floor was elevated several feet above that of the church, to clear the arched roof of the burial vault below. It stood at right angles to the old aisle, having a gable to the north. The pulpit continued to stand, where it had no doubt stood since the Reformation, with its back to the middle pillar on the south side of the nave.

The three north clerestory windows, which had been built up and plastered over in 1827 when obscured by the elevation of the aisle roof, were found, on being reopened, to have inner lintels of oak, completely decayed. The south clerestory windows, arched throughout with stone, though obscured for a third of their height by the aisle roof, had never been entirely disused. The gables of the nave were found plastered in an arched form ten feet above the later horizontal ceiling, marking the curve of the original open roof. Two oak rafters, mortised for a framed roof and worm-eaten to

the heart, were found lying as supernumeraries across the nave walls. They no doubt formed a portion of the roof of 1485, if not of the still earlier church.

A plain octagonal font of red sandstone, twenty inches in diameter, which previous to 1822 occupied a position in the north aisle wall close by the door, and was reputed to be the holy water font, is in a tolerably good state of preservation.

The underpinning of the north aisle gable, and the excavation of flues for the heating apparatus at the east end of the nave, brought to light several cists, with sides and covers formed of rough red sandstone slabs, and open below. They were full length, and rested in a bed of coarse sand. Two of them, with one side common, lay about three feet beneath the floor, right in front of the north pier of the new chancel. Similar cists have been discovered in former times in various parts of the churchyard, but nothing appears to have been found in any of them except bones. The area of the church was used for the interment of many of the heritors, and nearly all the ministers of the parish, from the period of the Reformation till the present century, as it no doubt had been for many parishioners and priests of the Celtic and mediæval Church. The Rev. John Aitkin, like most of his predecessors, was buried in front of the pulpit in 1816. A regulation enacted in 1821, during the ministry of his successor, has had the effect of abolishing these interments in the church. The great quantity of bones found within a few inches of the floor, estimated as amounting to many cart-loads, can only be accounted for by the fact that the site was repeatedly extended over what had previously been a portion of the churchyard.

The church has now been restored, in accordance with plans prepared by Mr Robert Anderson of Edinburgh, and under his superintendence—a sufficient guarantee for the character of the work. The whole of the additions made in 1822 and 1827, and the older lofts, have been swept away, while the ancient portions of the fabric have been carefully preserved, and their distinctive features restored. An apsidal chancel has been added, and the aisle of 1827 replaced by a new north aisle in architectural harmony with the church. The nave is once more spanned by an open roof. The walls of the tower have been raised to form a belfry, and are now terminated by a parapet and saddleback roof, as in mediæval times.

A new turret at its south-east corner replaces the outside stair. Stained glass windows and other monuments to former ministers and parishioners, in a high style of art, are in the course of erection. Altogether, the restoration is of a kind that has seldom been attempted in the case of a Scottish parish church.

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The ancient sculptured stones previously discovered at St Vigean's are illustrated in the well-known volumes of Dr Stuart of Edinburgh and the late Patrick Chalmers of Aldbar. With regard to the originals, it may be sufficient to mention here that they are carefully preserved. The inscribed stone is intended to occupy a position within the church which will admit of its easy examination. The other two large stones have been built into the inner face of the wall, where they are well seen, while completely protected. The larger of these was found, on its removal from its former position, to have been similarly sculptured on both sides, the reverse showing traces of a cross of the same size and general design as the side exposed, though all but a small portion of the sculpture had been ruthlessly destroyed. The massive fragments of a cruciform pillar figured in Dr Stuart's second volume now occupies a conspicuous place in one of the new buttresses. The incised stone in the north-west corner of the church has not been disturbed.

The present notice concerns the stones that were brought to light during the restoration of the church last summer. They number upwards of twenty pieces, most of them mere fragments, but representing an almost equal number of monuments, for with one or two exceptions there has been no recovery of two separate pieces of the same stone. The original monuments had been broken up and used for building material at an early period, the latest wall in which they were found dating probably from 1485, while there is reason to believe that many of the stones had been so used at least as early as the twelfth century. It cannot be doubted that the ancient walls that have not been disturbed, comprising about two-thirds of the mediæval church, contain many similar fragments.

The following numbers refer to the accompanying photographs:—

1. A small elaborately sculptured cross, 25 by 12 inches, recovered from the foundation of what is believed to be a remnant of the Norman church. The two figures on the reverse resemble those on one of the



Invergowie stones. One of them wears three, the other at least two ornaments round the neck. Immediately over them the usual interlaced ornament is worked into a crescent form. The material is a coarse-grained red sandstone, naturally inclined to board. Having been exposed for many centuries to the drainage from the roof, the stone has lost much of its silica, and though quite whole when first discovered, separated into a dozen fragments on becoming dry. (See Plate XXXI.)

2. Recovered in two pieces from near the top of the north clerestory. Measures 37 by 17 inches. One side shows a wheeled cross, the shaft of which is in two divisions, differently ornamented. The upper division has on either side a symbol of the Trinity, and the lower a priest, one of them apparently with an open book in his hand. The wheel of the cross is ornamented like that of the Farnell stone, and its limbs have roll-like terminations like those at Dyce and Aboyne. The reverse has in its upper portion what appears to be a representation of the flight into Egypt—Joseph and Mary, the latter with the infant Saviour in her arms, and a gate shut behind them. Below is a meeting of two pedestrians, whose dress is no doubt characteristic of the period. The broad bonnet is of a pattern hardly yet extinct in Scotland. (See Plate XXXII.)

The stone is a fine-grained slab of Arbroath pavement. One of its upper corners must have served as a hone to the parishioners seven or eight centuries ago, some of whom had not scrupled to try the edge of their tools upon the holy family.

3. A large fragment (30 by 10½ inches) in red sandstone of an elaborately sculptured cross (see Plate XXXIV.), which terminates in a semi-circular base like that at Farr, in Sutherland. The cross is considerably relieved. What remains of the outside sunk face is also ornamented. The reverse is blank, but as the stone is comparatively thin, it may originally have been twice as thick, and sculptured on both sides. It was recovered from the top of the tower, where it lay across two corbels, with its sculptured face downwards. It was probably placed there in 1485.

4. A large thick fragment, in red sandstone, of what appears to have been the cover of a coffin, measures 42 by 15 inches. Its sculptured face, which on the above supposition must have been downwards, consists of a broad border of the usual interlaced ornament, surrounding a narrow sunk centre, on which is sculptured a wheeled cross, with long upper limb

terminating in a roll, on which stands an attenuated elephant! Over the latter is a circular ornament, and still higher up the lower and middle portion of a cross of the same type as the one below. This stone was found in an underground wall outside and close to the north-west corner of the north aisle. The wall seemed to have been built to strengthen the foundation. (See Plate XXXIV.)

5. A large fragment of the inscribed stone, measuring 25 by 21 inches. Two of the upper limbs of the cross and a grotesque figure are seen on one side, and on the other a stag followed by hounds, below which are some fragmentary portions of other animals. The graceful circular ornament on one of the edges is now complete from head to foot, the whole length of the stone being six feet. A triangular fragment, measuring about fourteen inches on each side, is still wanting. Nine or ten inches of the upper portion of the edge, which bears the inscription, is included in the fragment, but is neither inscribed nor ornamented. Notice the lines scratched across the upper as well as the lower corners. This fragment was recovered from the east gable of the church, or the adjoining stair. (See Plate XXXIII., and also Vol. VII. Plate IV. for the inscription.)

6. A slab, obviously intended to lie horizontally upon a grave, stepped near the head to receive the foot of a perpendicular cross, and having its upper surface marked by an ornamented border, surrounding a narrow sunk centre. The latter, which is perfectly plain, may have been hollowed out to receive a sculptured panel. One of the edges of the stone is incised with grotesque-looking figures of men and animals. The stone, now broken in three, was found in the foundation of the east gable of the nave, near the centre, where it must have been placed not later than 1242. It is of red sandstone, and measures 62 inches long by 18 inches wide at the widest end, and  $6\frac{1}{2}$  inches thick.

7. The three upper limbs of a cross projecting beyond, and considerably relieved from the surrounding disk, sculptured nearly the same on both sides. The disk is moulded on the face and ornamented on the edge. Material, red sandstone. Measures 14 by 11 inches.

8. A square pillar of red sandstone, having a cross of a different pattern sculptured on each of its four sides, and relieved about two inches on the face. Height 40 inches, and width of each face from 10 to 12 inches. Though now described and photographed for the first time, it was

discovered many years ago, and used as a footstep for the inscribed stone, one of its sides having been hollowed out for the purpose. It is now built into the wall of the church near the north-west corner. The side shown is the most elaborately carved.

9. A fragment of a wheeled cross, with the upper half of the figure of a priest. Bears a strong resemblance to the Aldbar stone. No remains of sculpture on the reverse. Red sandstone. Measures 13 by 13 inches.

10. A fragment, apparently of a cross, with remains of sculpture only on one side. The ornament runs across the shaft of the cross in horizontal lines like an inscription. There is similar ornament on the lower part of the Woodwray stone, now at Abbotsford. Material, red sandstone. Measures 15 by 15 inches. Both this fragment and No. 9 are now built into the west gable of the church.

11. A noble fragment, in character resembling the inscribed stone. One side shows two of the upper limbs of a cross united by a circular rope-like fillet, enclosing an eagle-headed lion or dog. The reverse shows a stag startled from his rest. The sculpture is bold and to the life. No ornament on edge. Red sandstone, 11 by 8 inches. (See Plate XXXIII.)

12. A small fragment (8 by 7 inches) of a fine example of the *Z and spectacle ornament*. The sculpture is in high relief; the material a thin slab of Arbroath pavement, probably not above half the original thickness. (See Plate XXXIII.)

13. A thick fragment of red sandstone, 14 by 10 inches, representing a grotesque-looking animal and one flank of a second. (See Plate XXXIV.)

14. Part of the upper portion of a monument in Arbroath pavement of a primitive type, representing, in horizontal order, a man in a hooded cloak, a staff, and a simple form of the spectacle ornament. This stone, with the rest of the group from 12 to 17, is now built into the inner face of the wall of the church. Its reverse, however, is marked by part of the ornamented limb of a cross, and the symbol of the Trinity, as on No. 2. Measures 11 by 8 inches (not 14 by 10 inches, as on Plate XXXIII).

15. A slab of Arbroath pavement, 24 by 11 inches, having a large staff in the middle, and on either side a border of characteristic Norman work. This appears to have formed part of a sepulchral slab, probably that of the priest of the period, the pastoral staff being indicative of his sacred profession. (See Plate XXXIV.)

16. The head of a bridled or harnessed horse, and part of a circular ornament, in Arbroath pavement. Measures  $9\frac{1}{2}$  by  $6\frac{1}{2}$  inches. Reverse blank. (See Plate XXXIV.)

17. A warrior on horseback, with spear in hand. The reverse shows a portion of an ornamental cross. Material Arbroath pavement. Measures  $13\frac{1}{2}$  by 11 inches. No. 14 and this may possibly be fragments of the same stone. (See Plate XXXIV.)

18. This fragment of a cross bears a striking resemblance in size, form, and ornament, to a stone at Kingoldrum, so much so that both might have been worked from the same design. See "Sculptured Stones of Scotland," vol. i. pl. lxxxix. Arbroath pavement. Measures 15 by 12 inches. Not so thick now as it was originally.

19. Fragment in red sandstone,  $6\frac{1}{2}$  by  $6\frac{1}{2}$  inches, showing on either side part of the head of an ornamented cross in relief. One of the corner panels is filled with the head and neck of an animal, the other with a circular ornament like that on the edge of the inscribed stone.

20. A grotesque representation of a man mounted or poised on the neck of a horse or mule. Red sandstone. Measures 17 by 15 inches.

21. Slab of Arbroath pavement, having circular ornament within the moulding of an arch. Now built into the west gable of north aisle. Measures 21 by  $9\frac{1}{2}$  inches. Reverse blank.

22. Fragment of plain relieved cross, in red sandstone.

23. Fragment, showing upper limb of cross and corner ornament on both sides. Red sandstone. Measures  $6\frac{1}{2}$  by  $6\frac{1}{2}$  inches.

24. Upper portion of cross, whether monumental or architectural. Almost identical with sepulchral cross at St Blane's, in Bute, except in being completely perforated. (Vol. ii. pl. lxxiii.) Upper limb appears to have projected beyond wheel. Red sandstone. 17 by  $10\frac{1}{2}$  by 5 inches.

25. Upper corner of plain cross, in red sandstone.

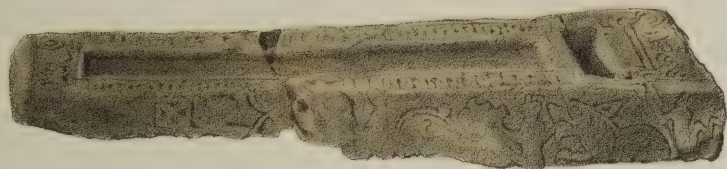
26. Norman arch stone, with face projecting from the bed like a corbel. Red sandstone. (Forms a second order to the stone sketched in connection with the architectural portion of this paper.)

27. A small fragment, in red sandstone,  $5\frac{1}{2}$  by 4 inches.

28. Small curved ornament.

29. Fragment, showing a man's head.





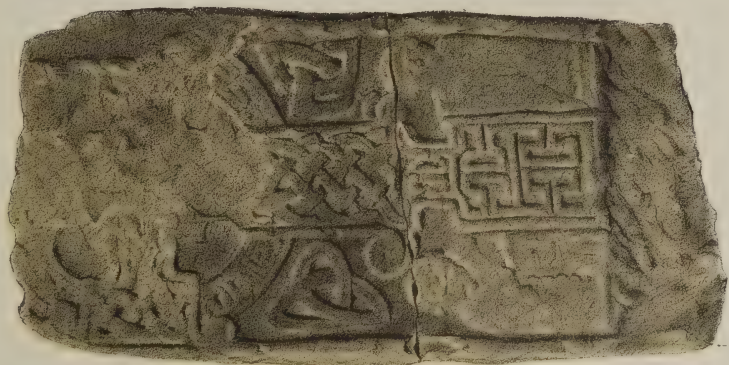
N<sup>o</sup> 6.  
62 x 18 in.



N<sup>o</sup> 1.  
25 x 12 in.







N<sup>o</sup> 2.  
37 x 17 in.





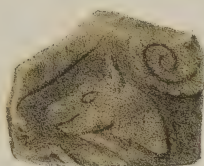


SCULPTURED STONES, ST VIGEANS, FORFARSHIRE.





Nº 3  
30 x 10½ in.



Nº 16  
9½ x 6½ in.



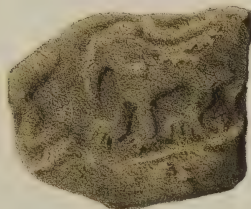
Nº 4  
42 x 15 in.



Nº 17  
13½ x 11 in.



Nº 15  
24 x 11 in.



Nº 13  
14 x 10 in.





## IV.

NOTICE OF A COLLECTION OF FLINT IMPLEMENTS FOUND IN THE NEIGHBOURHOOD OF FORDOUN, KINCARDINESHIRE, NOW PRESENTED TO THE MUSEUM. BY THE REV. JAMES BRODIE, MONIMAIL.

In the neighbourhood of Fordoun a good many specimens of flint implements have been found. The arrow-heads are of different forms, and vary in size from half an inch to  $2\frac{1}{3}$  inches in length. They are known among the peasantry by the name of "fairy arrows," and were valued by the ploughmen not as antiquarian curiosities, but as means by which they were enabled to strike fire for the matches with which they kindled their tobacco-pipes. A fine hatchet was lately found; and after having been kept for some time, was broken into pieces for distribution among the smokers in the neighbourhood.

Being aware that both ethnologists and geologists have had their attention turned to the prehistoric remains of Western Europe, the author of the present notice, happening to be in the neighbourhood of Fordoun last year, applied to an intelligent labourer, who for want of health had been obliged to relinquish the occupation of a ploughman, and take up that of a mole-catcher, to purchase as many specimens of these early manufactures as he could procure, and to collect as much information in regard to the places in which they were found as he could easily ascertain. It is principally from the reports furnished by this collector that the following statement has been drawn up:—

About a mile from the parish church of Fordoun there are the remains of a Roman encampment. A ditch, about 7 feet deep, and 10 or 12 feet wide, encloses a somewhat irregular parallelogram, 90 paces in length by 50 in breadth. A small stream runs past, from which water had formerly been drawn to fill the ditch.

Taking this encampment as our starting-place, about half a mile to the south-east, we come to Auchenyoach, a farm where a few years ago, in digging a foundation, some antique hatchets were found. Two were formed of stone and one of bronze. A mile farther to the east, at a place called Waterlair, there is a large cairn still remaining. A smaller cairn

was removed some years ago, in the centre of which was found a bronze vessel, now in the possession of J. Nicholson, Esq., Glenbervie. Near this cairn is a field, in which at a former time a number of arrow-heads were found. At a place a little distance off a good many chips of flint were found, which seemed to have been struck off in manufacturing arrow-heads.

Proceeding eastward, along the south side of the Water of Bervie, we pass several places where arrow-heads have been found. On the same side of the river, about a mile and a half from its mouth, there is a farm called Pettie. At this place, some time ago, a little knoll was ploughed up, where a large collection of chips was discovered. No finished implements were found among them; but in the neighbourhood a number of arrow-heads have been picked up, and a hatchet of blue flint was also found.

Retracing our steps, and proceeding again from the Roman (?) camp in an opposite direction, about half a mile to the west, we come to Cairnton, where there was a large cairn of earth and stones, which is now removed; and a little farther on is Cairn-beg, where there was a smaller cairn. On that farm the ploughmen, in the year 1842, took a fancy to collect arrow-heads, and in one season gathered about a hundred.

On the same side of the stream, farther up its course, similar specimens have been found.

The places we have referred to are all on the south side of the river. On the north side a good many arrow-heads have been gathered. These in general differ very remarkably in form from those that have been picked up on the south side. They are of an ovate or lozenge shape. They are very neatly finished, but without barbs. In general they are thinner, in proportion to their size, than those found farther to the south. At the farm of Pitcarles, on the north side of the river, a great many chips were found, indicating a place where these implements had been fabricated. In that neighbourhood the collector was told that a good many arrow-heads had been picked up, all of which were of the ovate form, and without barbs.

A great many of the chips which seem to have been broken off in forming the arrow-heads, bear evident traces of having been fragments of water-worn pebbles. We are therefore led to conclude, that the materials

from which these implements were fabricated must have been collected on the sea-shore. There seems to be no bed of flints, like that found in Aberdeenshire, indicating the remains of a stratum of chalk.

The arrow-heads, as we have already remarked, belong to two distinct classes, those with barbs and those without them. The specimens of the first class, collected during last winter, amount to twenty. All of them were found on the south side of the Water of Bervie, with the exception of the small one that stands last in the third row, at the right hand. Since writing this, I have been informed that, at Kinneff, on the sea-coast north of the Bervie, where this specimen was found, many similar ones have been gathered. The specimens collected of the second variety amounted to seven. All of these are known to have been picked up on the north side of the river with the exception of two. The place where these two were picked up was not ascertained.

The river is a small stream, which is easily fordable. It might serve very well to mark the boundary between the grounds of two friendly tribes, but would be of no avail as a defence for those who sought to repel the invasion of a foe.

Having stated the facts that have been ascertained in regard to these implements, and the localities where they were found, we may now advert to the inferences which they suggest.

In the first place, the marked diversity of form which these relics exhibit leads us to suppose that the district was formerly occupied by two tribes, who made use of implements of different forms. At the same time, the nature of the boundary dividing the two localities in which they are found, leads us to conclude that these tribes lived in harmony, keeping within their respective boundaries, and having due regard to the rights of their neighbours. This of itself may be regarded as indicating a considerable degree of comparative civilisation.

A difficult and interesting question follows. Why did the ancient inhabitants of Scotland employ arrows pointed with flint? Some seem inclined to attribute the practice to their ignorance of the mechanical arts. With that idea we cannot concur. The formation of these implements implies more than ordinary skill. We cannot suppose the fabricators of them to have been unacquainted with the use of splinters of bone in pointing arrows for the ordinary purposes of the chase. There must

have been some peculiar object in view which led them to point their arrows with flint.

The number of arrow-heads found in the neighbourhood of sepulchral cairns suggests the idea of their having been principally used in battle.

The loose way in which they must have been connected with the shaft leads us further to infer, that the intention of their fabricators was not merely to inflict a painful wound, but to leave the imbedded flint ranking in the flesh of their enemies. Taking all circumstances into consideration, we are led to conclude that the use of the flint arrow-head, though it may be condemned as cruel, was undoubtedly a very ingenious device.

If we suppose that the Roman camp at Fordoun and the sepulchral cairns at Cairnton and Waterlair were contemporary, which, of course, is merely conjectural, the circumstances we have mentioned afford evidence of a very determined resistance on the part of our forefathers to the Roman invaders.

The remains of the Roman encampment show plainly that it must have been a place of great strength, erected for defence against a daring and dangerous foe.

The farm at Cairnbeg, where in one season a hundred arrow-heads were picked up, seems to have been the site of a battle. As all the arrow-heads belonged to the barbed variety, though the greater part of them wanted the projection between the barbs, as if they had been rudely or hastily constructed, we are further led to suppose that the Caledonians contended with an enemy who made use of weapons of a less durable nature than the flints employed by themselves. This characteristic is applicable to the Romans.

The monumental cairns erected in the neighbourhood may be looked on as a proof that the natives either remained masters of the contested field, or that they returned at an after time to pay the homage due to the slain. Similar remarks might be made in regard to the cairns and field at Waterlair.

The well-known fact, that though the Imperial legionaries made incursions into the territory north of the Forth, they did not retain their conquests, has been accounted for by Gibbon, in his account of the Decline and Fall of the Roman Empire, by supposing that the invaders retired



because they found the climate cold, and the country barren; we may with equal probability infer, that one of their reasons for retreating was their finding that a flint-headed arrow, shot from a Scottish bow, was a weapon by no means to be despised.

The flint implements found at Fordoun differ very widely from some at least of those that have been found in the valley of the Somme. Many of those collected from the latter locality, in the eyes of those who are uninitiated in geological research, exhibit no appreciable evidence of any design having been employed in their fabrication. The arrow-heads from the neighbourhood of Fordoun are well fitted for awakening our admiration, more especially when we look at the hatchet and consider the nature of the tools employed in their manufacture. We look on them as affording evidence of the mechanical skill of the Scots in the ages that preceded the introduction of metals, similar to that which the invention of the steam-engine gives of their ingenuity at the present day.

It is also to be kept in mind, that the descendants of those warlike tribes who so boldly resisted the Roman invaders, were among the first of the independent races beyond the boundaries of the Empire who embraced the Christian religion; and ecclesiastical historians tell us that they made such progress in learning and theology, that Scotland was looked upon as a centre from which the truth of the gospel spread abroad even into continental nations, and that many of the German races were first brought under the influence of Christian civilisation by missionaries sent out by the Scottish Church. Whether we look to prehistoric times, or to the early days of the Christian Church, Scotsmen have no reason to be ashamed of the origin from which they spring.

## V.

NOTICE OF A HIGHLAND POWDER HORN, HAVING ON IT THE MONOGRAM "SIR GEORGE MACKENZIE;" WITH SOME REMARKS ON HIGHLAND COSTUME. (THE HORN, WITH OTHERS OF VARIOUS KINDS, WAS EXHIBITED.) BY JAMES DRUMMOND, R.S.A., F.S.A. SCOT.

[This paper is reserved for the "Archæologia Scotica," vol. v., now in the press.]

MONDAY, 13th May 1872.

JOHN ALEXANDER SMITH, Esq., M.D., Vice-President, in the Chair.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors:—

- (1.) By Mrs STEWART, Sweethope, Inveresk, through JAMES DRUMMOND, Esq., R.S.A., F.S.A. Scot.

A set of Bagpipes, which belonged to Prince Charles Edward Stuart. These bagpipes are of the Irish form, and mounted with ivory and silver keys. They were purchased at Rome about the year 1830, under the following circumstances:—On the death of Cardinal York (the Prince's brother), the effects contained in his villa at Frascati were disposed of by public sale. These bagpipes were then exposed as having belonged to the Prince, and were purchased by a gentleman from Kelso who was present, in order to gratify a friend who was an amateur of the Irish bagpipe, the late Mr Richard Lees of Galashiels. This friend of Mr Lees, seeing the bagpipes exposed, and considering that they would be highly appreciated by the latter, bought them, and on his return to Scotland they were presented to Mr Lees. He showed them to Sir Walter Scott, who took a characteristic interest in the relic, and stated that the bagpipe was an instrument of which the Prince was fond, and that he was possessed of several sets. The donor, Mrs Stewart of Sweethope, is the grand-daughter of the late Mr Lees of Galashiels, to whom the pipes were presented.

- (2.) By ROBERT BAIKIE of Tankerness, Esq., M.D., F.S.A. Scot.

A Double Pipe-Case of Ebony, 21 inches in length, richly carved with floral patterns, and mounted with silver.

- (3.) By Mr PETER COLLIER, 12 Randolph Crescent.

Two Arrow-Heads of Yellow Flint, leaf-shaped, each an inch in length.

Portion of a serrated Arrow-Head. All found at Montblairy, Banffshire.

(4.) By JOHN TURNBULL, Esq. of Abbey St Bathans, F.S.A. Scot.

Vase of Glazed Yellow Clay, 5 inches in height, and  $12\frac{1}{2}$  inches in circumference at the widest part, tapering to a point, and in form somewhat resembling the bud of a plant, ornamented with seven stripes, alternately plain and of a scale-like pattern, found at Assouan, Upper Egypt. This form seems rare. Another example, however, is in the Rhind Collection of Egyptian Antiquities in the Society's Museum, differing but slightly from this one.

(5.) By Rev. F. D. TEESDALE, F.S.A. Scot.

Terra-Cotta Figure of a Dove, 6 inches in length, with two projecting bands across its breast, in the form of a cross.

(6.) By WALTER DICKSON, M.D., F.S.A. Scot.

The "Caledonian Mercury," 1753-57, bound in three volumes.

(7.) By C. PIAZZI SMYTH, Esq., Astronomer Royal for Scotland.

Pamphlet of Extracts from the Thirteenth Volume of the Astronomical Observations made at the Royal Observatory, Edinburgh.

(8.) By the SOCIETY.

Proceedings of the Society of Antiquaries of London, Vol. V. No. 3.

(9.) By Sir JOHN LUBBOCK, Bart., F.S.A. Scot., the Author.

The President's Address at the Anniversary Meeting of the Anthropological Institute.

(10.) By JOHN EVANS, Esq., F.S.A. Scot., the Author.

Note on a Hoard of Coins found at Santon Downham.

Note on a Hoard of Coins found at Pitstone Common. (From the "Numismatic Chronicle.")

(11.) By R. W. COCHRANE PATRICK, B.A., LL.B., F.S.A. Scot., the Author.

Unpublished Varieties of Scottish Coins. (From the "Numismatic Chronicle.")

The following Communications were read :—

## I.

NOTICE OF PERMISSIONS GIVEN AT PARIS TO JOHN ACHESON TO MAKE DIES WITH THE PORTRAIT OF MARY QUEEN OF SCOTS, 21ST OCTOBER 1553, AND TO NICOLAS EMERY TO MAKE A DIE FOR JETTONS, WITH THE ARMS, ETC., OF THE QUEEN OF SCOTS, FROM A REGISTER PRESERVED AT PARIS. BY AUGUSTUS W. FRANKS, ESQ., M.A., DIR. S.A., F.S.A. Scot.

While in Paris some years ago, my attention was directed by Baron Pichon to a register preserved in the French archives, in which was to be found much information respecting the making of dies for coins and counters. Among the entries which I found in it are two connected with Mary Queen of Scots, and relating to the year 1553. The first of these is dated 21st October 1553, and is as follows:—

“Ce jourdhuy xxi. jour d'octobre mil v<sup>liij</sup> a este permis a Jehan Acheson, tailleur de la monnaie d'Escosse, de graver pilles et trousseaulx aux protraictz de la Roynie d'Escosse, par lui exhibez a la dite court, a la charge de fere les espreuves en la Monnaie de Paris, parentre lun des gardes pour icelles faictes estre apportees en la dite court.”

There are only two coins known with portraits of the Queen, which bear the date 1553—viz., the testoon, with crowned bust to right, and the legend on the reverse, *DA PACEM DOMINE 1553*. (Engraved in Lindsay, plate viii. No. 179; and in Wingate, plate xxvi. fig. 11;) and the half testoon, with the Queen's bust in the opposite direction, without a crown. Legend on the reverse, *IN IVSTICIA TVA LIBERA NOS DNE 1553*. (Lindsay, plate viii. No. 180.) The first of these coins is somewhat rare; and of the second I believe that only one specimen is known, now in the British Museum.

Although the heads are very dissimilar, it is possible that they may have both been prepared by Acheson, for the word portraits is used in the license in the plural. The crowned bust may have been preferred, which would account for its being less rare than the other.

The second entry relates to a point much debated among numismatists. In the series of Scottish pieces are two of silver, one of which is thus noticed by Lindsay:—“There is another coin of this date [1553] given



by Cardonnel [plate vii. fig. 1], which has been the subject of much conjecture; it bears on the obverse *DELICIE. DNI. COR. HUMILE*, with the arms of Scotland crowned; reverse, *F.M.* in cypher crowned, between two stars of six points waved, *DILIGITE IUSTICIAM* 1553; and the use of such a cypher several years before her marriage with the Dauphin is not easy to account for. The resemblance this coin bears to the gold coins of the same date is remarkable; but although the original treaty in 1548 for the marriage of the Queen with the Dauphin, coupled with her residence at the French court, might account for the appearance of such a cypher on a medal or a jetton, its occurrence on the coinage of Scotland could be scarcely warranted; and I am therefore inclined to think that it was either struck as a medal, or not intended for general circulation, and its anomalous weight (two pennyweights) would render this supposition still more probable."

The following entry in the register above alluded to seems to refer to this piece, though it does not exactly agree with it in some details:—

"Ce jourdhuy dernier jour de Janvier l'an mil cinq cens cinquante trois a este permys a Nicolas Emery, graveur, de graver vne pille et vng trousseau a fere gectons aux armes de la royne d'escosse du costé de la pille; et du costé du trousseau y a une devise qui est une F et une M lasees ensemble qui sont romaines et deux soleils au costé de la dite devise. Et autour dudit trousseau est escript *Diligite Justiciam* 1553. Et autour est escript *Maria D G R Scotorum*."

This entry, though exactly agreeing with the reverse of the piece above described, does not quite accord with the obverse. It is possible that some alterations were made in the design before the counters were struck.

From the position of the entry, the date must be January 31, 1553–4, which was shortly after Mary had been provided with a separate establishment. A letter from her to her mother, preserved among the Balcarres papers in the Advocates' Library, and printed in Prince Labanoff's "*Recueil des Lettres de Marie Stuart*," vol. i. p. 17, dated January 1, [1554], has the following passage:—"Ce jour de l'an je suis entrée au menage qui vous a plue me dresser."

## II.

NOTES OF COINS RECENTLY FOUND IN VARIOUS PARTS OF SCOTLAND. BY GEORGE SIM, Esq., F.S.A. SCOT., CURATOR OF COINS.

I. *Holecroft, Kirkcudbright*.—The following is a copy of the declaration of William M'Neil, taken by the Procurator-Fiscal of the district.

“RAVENSHALL, 6th January 1872.

“On Saturday the 23d December last I was quarrying stones in a field on the farm of Holecroft, parish of Kirkmabreck. At the place where I was quarrying there seemed to be the remains of old houses. I came upon a large flat stone, several feet below the surface; the stone was about five feet long by two feet broad, and on removing it I found a number of silver coins; they were in what seemed a brass or copper pot; but as soon as the pot got the air, it went to atoms. I did not count the coins, and I gave some of them away, one to one person, and another to another person, for nothing; but the greater number I sold to two men whom I did not know. I got drunk, and I do not know what the said two men paid me for the coins. I have not any of the coins now. I am sure the coins which I found did not number nearly one hundred.”

At the time of this discovery it was reported that gold coins were among those found by M'Neil. It is not believed that he has told the truth. It is thought that the copper pot did not go to atoms, and may yet be heard of.

The following is a list of the coins recovered and sent to Exchequer, viz. :—

*Silver.*

Half Testoon of Francis and Mary, 1558—“Fecit Utraque,” &c. (fine, but injured by recent cutting of the edge), . . .	1
Testoons of Mary, 1558—“In Virtute,” &c. (well preserved), . . .	2
Half-Testoons of Francis and Mary, 1559—“Jam Non Sunt,” &c. (not well preserved, and one broken), . . .	4
Testoons of Francis and Mary, 1560—“Vicite Leo,” &c. (one fine, another well preserved, and the third poor), . . .	3

---

Carry forward, . . . 10

*Billon.*

	Brought forward,	. 10
Placks of James III. and IV. (nearly all illegible),	. . .	7
Do. of James V. (one broken),	. . .	6
Edinburgh Placks of Mary (some of which broken),	. . .	25
Do. Half-Placks, do. (one broken in two),	. . .	2
		<hr/> 50

Of these we have got the first-named coin, one of the second, and one of the fourth, for the Museum.

II. *Dunbar*.—About the middle of December last one of the workmen engaged in digging the foundation of a house at the Kirkhill, near Dunbar, discovered a gold coin, which proved to be an Ecü of Louis XI. of France.

Having similar coins in the Dunblane Trove, we do not require this for the Museum.

III. *Leith Harbour*.—On 18th and 19th January there were found at Leith Harbour—

A Dollar of Ferdinand II., Emperor of Germany, of the city of Hamburg, 1621.

A Turner or Bodle of Charles II.

A Half-Turner or Penny, do.

A Nuremberg Token or Counter.

The hilt of a small Dagger, about three inches long, probably Flemish.

A Stone, about eight or nine inches long, with two drilled holes in it, with the date, 1671, scratched deeply upon it. This is believed to have been used by fishermen for sinking their nets.

The following is a copy of the declaration taken before the Procurator-Fiscal of Mid-Lothian in regard to this discovery:—

“ EDINBURGH, 25th January 1872.

“ William Grant, one of the partners of M'Donald & Grant, contractors, Leith Docks, and residing at Hawkhill Villa, Lochend Road, Leith, declares, I am one of the contractors for the making of a graving dock and

new bridge at Leith harbour. On Thursday or Friday, 18th and 19th January 1872, I learned that some coins had been found about five feet beneath the foundation of the old sea wall. My foreman at the work was Thomas Grierson, and he gave me the four coins, and what is apparently the hilt of a dagger, which articles I now produce. Yesterday there was found at the same place a stone, oval shaped, with a hole in each end of it, and the date 1671 upon it. That stone is now in the Antiquarian Museum, Edinburgh, I having sent it there."

The coins and hilt have been got from Exchequer, and placed with the stone in the Museum.

IV. *Lanark*.—I have examined twenty German dollars, recently found at Lanark, which were recovered by the Procurator-Fiscal and transmitted to Exchequer. Sixteen of the dollars are of Maximilian Henry of Bavaria, dates ranging from 1663 to 1679. There is one Maximilian, date 1620; another Ferdinand III., Frankfort, 1647; and two others not very legible.

The following are the particulars relating to this discovery :—

"George Carruthers, residing at Nemphlar, Lanark, had a contract under Mr Gairn Steel, of Holmhead, for reducing a mound on Mr Steel's property of Mashock, in the parish of Carluke. The mound, which appeared to be not artificial, rose gradually from the east, and terminated abruptly at its west end, with a bank fifteen feet high. There is a very old and large ash tree on the top of the mound at its west end. The mound was covered with turf, and, on 20th January 1872, Carruthers was lifting the turf from the crest of the mound, when, about nine inches from the surface, and eight yards or so west from the ash tree, he found these twenty-one silver coins.

"He delivered twenty of them to me, as Procurator-Fiscal of the county, and they were handed to the Queen's and Lord Treasurer's Remembrancer. The one retained by the finder was of the same die as sixteen of those which he delivered up, and bears date 1669. The soil about the coins was rather darker in colour than the bulk of the mound, and probably they had when deposited been enclosed in some bag or wrapper, which had decomposed. There is an old cot-house on the lands of Mashock, about fifty yards from the spot where the coins were found, and the mill of Mashockmill is 130 yards or thereby distant."



V. *Dornoch, Dumfriesshire*.—About the end of September, or beginning of October last, there was found on a farm in the parish of Dornoch, in the county of Dumfries, “a horn containing a considerable number of old silver coins.” The coins, or most of them, were recovered by Mr Thomas Corrie, the Procurator-Fiscal at Dumfries, and forwarded by him to Exchequer, where, at the request of the Remembrancer, I examined them, and found them to consist of 1 Scotch penny, 76 English pennies, and 3 foreign sterlings, as undernoted, viz.:—

Edward I., London,	.	.	.	13	
Canterbury,	.	.	.	10	
Durham,	.	.	.	1	
Bristol,	.	.	.	2	
Newcastle,	.	.	.	1	
York,	.	.	.	1	
Dublin,	.	.	.	1	
Waterford,	.	.	.	2	
				—	31
Edward II., London,	.	.	.	23	
Canterbury,	.	.	.	13	
Durham,	.	.	.	3	
Bury St Edmunds,	.	.	.	4	
Berwick,	.	.	.	1	
				—	44
Edward III., London,	.	.	.	.	1
				—	
					76
Foreign sterlings—					
Gaucher II., struck at Ive, and 2 others,	.	.	.	.	3
Alex. III. of Scotland,	.	.	.	.	1
				—	
					80

The coins were returned to the Procurator-Fiscal to be restored to the finder.

VI. *Ancient Indian Coin found in the Island of Unst, Shetland*.—There was lately shown to me a small silver Indian coin found last year in the

Island of Unst, Shetland. It belongs to Rudra Sáh, one of the Sáh kings of Gujerat, who it is supposed gained their independence about the middle of the third century. The obverse of the coin is not well preserved, but the reverse is distinct, and is similar to the coin engraved in plate xxxvii. No. 13, vol. ii., of Prinsep's "Indian Antiquities." The characters on the coin are a modification of the Sanscrit or Nagari alphabet, and are read thus :—

"Rájna Kshatrapasa Rudra Sáhasa, Swámi Jina Dámáputrasä."

("Of the Royal Satrap Rudra Sáh, the son of the Lord Jina Dámá.")

These coins are usually found within the limits of Surashtra, none having been found in Afghanistan. "Sáh" is supposed to be a corruption of "sádhu," signifying "good" or "excellent."

How this coin found its way to the Island of Unst is difficult to imagine.

### III.

#### NOTICES OF SOME IRON RELICS FOUND IN CARLUKE PARISH.

By W. R. RANKEN, Esq., CARLUKE.

An iron axe, recently brought under notice, which was discovered in an upper bed of clay, recalled to memory some other interesting relics of past time, the existence of which may be worth recording.

I. *A Helmet*.—In 1820, while stones were being quarried for the restoration and extension of Lee Castle, an iron helmet or basinet was found in Braidwood Till, in a cleft of the rock, deep under washed in earth and sand, which filled up that crevice. This head-piece is in good preservation, the left side being all but entire, and the right retaining the front half in nearly a complete state.

In length (elongated by pressure, it is)	13 inches.
Width (compressed somewhat),	6 "
Height,	7½ "
Over ridge,	18 "

The steel plate of which the helmet is constructed is throughout about  $\frac{1}{8}$  of an inch thick, with some exceptions.

Along the welded line or ridge it is fully  $\frac{1}{8}$  of an inch thick.

At the front edge for a space of  $7\frac{3}{4}$  inches, the steel plate is expanded to  $\frac{4}{16}$  of an inch thick. This part presents the appearance of having had something fitted into it—probably a shield for the forehead and face; and is hammered off from the edge inward by a gradual thinning for  $2\frac{1}{2}$  inches, when the plate runs into the average thickness. In corroboration of this view, the corners where the thickness ends, in front of the first rivet on each side, are thinned off from the outer edge, as if to receive something to join by way of splice. A line of eleven rivets had run round the rim, apparently for the purpose of attaching a metallic band, to strengthen what would have been the weakest part. Six of these rivets are still in position, the heads of which, on the inner side, average  $\frac{1}{2}$  an inch diameter, and  $\frac{1}{16}$  of an inch thick, while, on the outside, they average  $\frac{1}{8}$  of an inch diameter, the holes from which the rivets have separated being clear of about the same diameter, so that it is probable the outside fixing would be by counter-sinking. The spaces between the fifth and sixth and tenth and eleventh rivets, or rivet holes, are nearly twice as wide as the others; but the positive need or use of the arrangement is not evident. It is not unlikely that these rivets served a double purpose—namely, to attach a strengthening border on the outer rim, as suggested; and to fix, at the same time, some thick lining to the inside, or a band to which the lining could be connected; because the heads of the rivets, unless sunk in a soft substance, or carefully covered, would have made a very rough and harsh fit. On the top there is a slightly displaced, and evidently broken-short socket, the remains of a peak of hollow iron, an inch high, supported by two lateral parts each an inch long, fitted lengthways to the ridge of the helmet, and fixed, originally by two, now by one rivet. This peak, or socket, has by appearance served the purpose, when entire and in use, of receiving and sustaining a crest, a plume, or an ornament, such as represented in early monumental effigies of North Britain. The badge or trophy would be movable at pleasure, as there is a small hole in the base of the socket, evidently designed for fixing or unfixing objects.

The weight of the helmet, in its present state, is 3 lb 1 oz., and is supposed to date *circa* A.D. 1300.

II. *Horse Shoe*.—In 1840, a horse shoe of true Roman character was discovered,  $2\frac{1}{2}$  feet in the soil, on the lands of Hillhead, by the Roman way. It is in good preservation, although corroded to some extent. In length it is  $4\frac{1}{2}$ , and in breadth 4 inches. It is preserved by the proprietor of the lands.

III. *Axe*.—An iron axe, lately secured, was in 1864 dug up in making a clay field for the manufacture of bricks and pipes on Braidwood lands, where huge stems of oak and other trees were found in an upper stratum of mossy earth above clay, about 3 feet from the surface. To connect the axe, in any way, with the trees, more intimately, would be venturesome ; but the instrument has an antique look, and is constructed of iron alone. The heel and cutting edge bear the marks of hard usage, and the handle is cleft at the end as if for the insertion of wood or iron to lengthen it. The axe is  $4\frac{1}{2}$  inches long in the blade,  $1\frac{1}{10}$  wide at the heel, and the face measures  $2\frac{8}{10}$  inches across, the handle being  $6\frac{1}{2}$  inches long. It is in the possession of the proprietor of the lands.

IV. *Trowel*.—About thirty years ago, when part of the basement walls of Belstane tower were being torn down, to clear away every vestige of the old structure, in order that a kale-yard should no longer be restricted in its limits, a trowel was found which had been built up in the walls at the time of erection. The precise date of this keep cannot be given with certainty, farther than that it was within the cork-screw-stair period ; but it was the scene of a fierce encounter recorded in a complaint made by John Livingstone of Belstane, on the 5th of February 1585, to the Council of State, in the following words :—"He walks out," as he stated, "under God's peace and the King's, when suddenly he is beset by about forty people who had him at feud : all bodin in feir of weir—namely, armed with jacks, steel bonnets, spears, lances, staffs, bows, hagbuts, and other invasive weapons forbidden by the law. At the head of them was William, Master of Yester, a denounced rebel," &c., &c.

The trowel resembles the tool still in use by masons in a general way. It is slightly scooped, and has a back like a modern dust shovel, indicating clearly enough, what is otherwise well known, that mortar in the olden times had been applied in a more liquid state than it now is.



From the back to the front it is 6 inches, the broadest part being about 5 inches. The back ledge is raised  $1\frac{1}{4}$  inch at the centre, and falls off at the sides to  $\frac{1}{2}$  an inch, and the tang of the handle is  $4\frac{3}{4}$  inches long. The mode of fixing the handle seems to have been effected by recurving the extremity of the tang. It is evident that the trowel had been used by a right-handed workman, the left side being considerably more worn than the right.

V. *Thumbikins*.—There is no record of this instrument of torture having been applied as an accessory in Regality or Barony Courts; but it may have been so. The specimen that turned up in this locality was a chattel of Maudslie. About 1790, when the old house erected by the Maxwells was about to be supplanted by the existing castle built by Thomas Carmichael, fifth Earl of Hyndford, the displenishing sale filled all the country round with furniture and trappings of very curious and varied character. Amongst the many, a box of “trumpery iron buckles, staples, cleeks, hinges, locks, keys, screws, nails, &c., &c.,” was knocked down to Walter Black, the smith at Law, and lay in his smithy all his remaining days, twenty-five years. At Walter’s death, there being no member of the family trained to continue the trade, another dispersion sale took place—when James Young, a former apprentice, secured the box, as a memorial of the old shop, at Walter’s roup, and carried it to the smithy of Waygateshaw, where it lay for twenty-three years. Time wore on, and the smith at Waygateshaw on removing from that place sold his effects. At the sale, Matthew, the smith at Law, acquired the veritable box; but Matthew being possessed of considerable curiosity, and experiencing temptation at the sight of such a collection of odds and ends—he being master of his own fire-end—tumbled the precious lot out upon the floor of his dwelling. Every article was patiently handled and remarked on, as was the manner of Matthew, and in due course he had the thumbikins under inspection. He could not “*contrive*” the purpose of the instrument, and it lay about the “smiddy vice-board” for a considerable time, for the inspection of all comers, without any satisfactory solution. Matthew at last thought of consulting a local authority, who held the unenviable distinction of knowing about everything, and, as a sequence, the thumbikins changed hands once more. It is of good construction, and

in excellent preservation, in little, if in anything, differing from most other specimens, if it be not in having a screw-driver formed at one end of the lower frame-work.

VI. *Pick*.—In 1834, when the foundation of the first furnace at Castlehill had been laid, evidence of an old coal pit on the site startled the contractor. The pit was cleared out in order to determine whether the foundation was good ; and in doing so, it was found that the pit was circular, not exceeding  $4\frac{1}{2}$  feet diameter—that, in fact, it was a spiral stair. In the old waste, baskets of wicker-work, something in form like a fish-wife's creel, with shoulder straps of the same material, lay about, but so decayed that a touch caused the whole to fall to dust. These baskets, no doubt, were alone the means of conveyance between the coal face and the pit-head—for all the underground arrangements admitted of no other method—a fact which carries us back a good way in the history of raising coal. A pick was also found, the shaft of which was totally decayed. It is from point to point 10 inches long (about half the modern length), the one arm, from the centre of the eye or socket for the handle, being  $4\frac{1}{2}$  inches, and the other  $5\frac{1}{2}$  inches ; the length of the ovoid socket is  $2\frac{1}{2}$  inches, the depth the same, and the width 1 inch. The whole is formed of four distinct plies of iron, imperfectly welded as it seems ; and on one extremity there is evidence of a clumsy eke—a thin piece of steel having been laid on the iron at the point of one of the arms, about  $1\frac{1}{2}$  inch long, and  $\frac{3}{4}$  of an inch broad ; and on the other side of the same point, a depression exists as if a similar addition had existed, the opposite arm having no such addition or mark.

After an exhaustive inquiry, no aged person in the district has any knowledge of, or even ever heard of, this mode of raising coal. A pit said to have been worked within the past hundred years still remains open to inspection, which is of small diameter, and is cradled or lined like a well with stones. This pit was worked by a hand windlass and jack, the jack being a counter-weight relieved from the windlass, and passed down the pit by the same action that raised the loaded hutch, thus aiding the lifting power. At this time coal was carried from the pit in sacks laid across horses' backs—a “load” or “laid” expressing the measure or weight of the burden. The earliest notice of coal being worked in the

parish, is an application to the Kirk-Session :—" *Sess. 25, August, 1650.* The qlk day, Claud Hamilton of garein desired liberty to sett The water off the Coalhaugh upon the sabbath morning qch was Granted because it was ane wark of necessity."

## IV.

NOTES OF TWO STONE CISTS AT CARSECREUGH, IN THE PARISH OF OLD LUCE, WIGTOWNSHIRE. COMMUNICATED BY THE REV. GEORGE WILSON, FREE CHURCH, GLENLUCE, CORR. MEM. S.A. SCOT.

These graves were found on the summit of a glacial drift knoll, in a peat moss about a quarter of a mile south-west of Carsecreugh Castle. There are traces of a small cairn having once been over them. The undermost was first discovered about eighteen months ago. Some workmen in digging gravel laid bare and partially destroyed the south-west end without observing it. A few days after John Forsyth, the shepherd, noticed an opening, and on looking in saw a rib, and on thrusting in his staff stuck it into a human skull lying about the centre. On examining the grave, he saw at the south-west or open end, on the right hand corner, a coarse earthen pot, shaped like a flower-pot, horizontally ribbed, about 6 inches high, and estimated to hold three choppins. On being touched it fell in pieces. It contained only fine dark brown or reddish mould. Near it lay the skull of a young child. The adult skull was that of a woman. Dr M'Cormack observed a well-preserved femur. The teeth were sound and unworn, one upper incisor wanting. There were portions of the ribs and vertebral column. I had both skulls in my hands. There was no peculiarity in their shape. There were no flint or other instruments.

This lower grave lies south-west and north-east. The extreme depth from surface, about 5 feet; length of cist, 38 inches; width at south-west end, 28 inches; at north-east, 14 inches; height, about 15 inches. The bottom is of rough stones, on the right or south-east side are two stones on edge, on the left three, and at the foot (or north-east end) two on edge capped by one laid flat. The cover is a single rough greywacke flag. This last winter the weather caused the earth above to slip into the

gravel pit, when the *upper cist* was exposed to view. It lay across the under one at right angles; that is, north-west and south-east. It contained only fine mould. A side stone measured  $30 \times 10$  inches; the greywacke flag covering it was  $36 \times 24$  inches.

It seems probable that the woman's body, when doubled up, had been laid on the left side; but the men did not notice this.

## V.

DESCRIPTION BY AHMED IBN-FOZLAN (AN EYE-WITNESS) OF THE CEREMONIES ATTENDING THE INCREMATION OF THE DEAD BODY OF A NORSE CHIEF, WRITTEN IN THE EARLY PART OF THE TENTH CENTURY. TRANSLATED FROM HOLMBOE'S DANISH VERSION OF THE ARABIC ORIGINAL, WITH NOTES ON THE ORIGIN OF CREMATION, AND ITS CONTINUANCE. BY JOSEPH ANDERSON, KEEPER OF THE MUSEUM.

The following description, by an eye-witness, of the ceremonies attending the incremation of the dead body of a Norse chief, on the banks of the Volga, in the early part of the tenth century, is so remarkable, that I have thought it might be interesting to have it presented to the Society, by translating Professor Holmboe's Danish version of the Arabic original, along with such portions of his notes as exhibit the correspondence of the remains found in the early Norse tumuli of the cremation period, with the ceremonies here described. In his introduction Professor Holmboe says:—

“The remarkable find at Mammen<sup>1</sup> in Denmark, and the find at Nedre-Haugen<sup>2</sup> in Norway, in some respects analagous to it, have induced me to bring out a translation (which has lain beside me in manuscript for many years) of an Arabic description of the funeral obsequies of a Russian (that is, a Norseman) of rank on the banks of the Volga. The burial rites here depicted are manifestly the same as those that were in use among our heathen forefathers in the North, and therefore form a connecting link between the north of Europe and Asia, where we find much

<sup>1</sup> Aarboger for Nordisk Oldkyndighed, 1869, p. 203.

<sup>2</sup> Aarsberetning for 1867, fra Foreningen for Norske Fortidslevninger Bevaring, pp. 59-61.



similarity. We find again a correspondence both to the rites described by the Arab and to the usages of the North, in the burial mounds in the government of Moscow, which in 1838 were explored by the Russian archæologist A. B. Tschertkoff,<sup>1</sup> and pronounced by him to be Scandinavian. In some of these skeletons were found, as in the Mammen-how, deposited in pits deeper than the surrounding surface of the ground."

"The Arab I speak of was called Ahmed Ibn-Fozlan (or Fodhlan), who in one of the first decades of the tenth century A.D. was sent by the Caliph Al-Moktader (who reigned from A.D. 907 to 932) as an ambassador to the King of Bolgaria (Vulgaria), on the Volga. Here he came into contact with the merchants of that nation, whom the Arab writers of the middle ages called Russian,<sup>2</sup> and by which they understood the people who in the greater part of Europe were called Northmen, and later Scandinavians. Ibn-Fozlan employed his sojourn in Bolgaria (among other things) in obtaining information regarding the so-called Russian usages and customs, and writing a manuscript in which these are described. This manuscript was, in the thirteenth century, incorporated into an Arabic geographical work by Abdallah Yakut, of which manuscript copies are preserved at Paris, Oxford, Copenhagen, and St Petersburg. The Copenhagen Codex was translated by Professor Rasmussen, and published in a treatise entitled "On the Commercial Intercourse of the Arabs and Persians with the Russians and Scandinavians in the Middle Ages," printed in Molbeck's *Athene* for 1814. But this translation contained a number of misrenderings, partly in consequence of the imperfect condition of the manuscript. A critical edition of the manuscript was first given in Frähn's work in 1823, entitled "Ibn-Fozlan's und anderer

<sup>1</sup> *Memoirs de la Soc. d'Archæol. et Numismat. de St Petersburg*, vol. iii. p. 197.

<sup>2</sup> Frähn says that when the Arab writers speak of Russians, they constantly mean the people who in the middle ages were called in Europe Northmen; while they always use the word *Seklab*, i.e., *Selave*, or *Slave*, to designate the people who afterwards took the names of Russians, Poles, *Selaves*, &c. Nestor states that it was the Northmen in fact who, under the name of Variago-Russians, established the Russian empire in A.D. 862. This statement of the Slavonic chronicler is borne out by the facts, that the names of the "men of the Russian nation sent by Oleg in A.D. 907 as ambassadors to Constantinople are those of Northmen," and not Slavonic; and that in Igor's great embassy of more than fifty persons, who in 944 concluded the treaty with the Greek emperor, there are only three Slavic names, the rest being all those of Northmen.

Araber Berichte über die Russens älterer Zeiten." The Danish translation was rendered into Swedish by Adlerbeth, and printed in English in "Blackwood's Edinburgh Magazine,"<sup>1</sup> and finally translated from the English into French in the "Journal Asiatique," vols. iv. and vi., 1824, 1825. The misrenderings of the Danish translation were naturally reproduced and considerably multiplied in the subsequent versions. Some of these were pointed out in the notes to the French translation. Frähn's German translation has thus been hitherto the most trustworthy, but it also stands in need of occasional corrections, and I have found it the most suitable version as a foundation for the illustrative notes which I have added.

Ibn-Fozlan's account is to the following purport:—

"Having been told that they did things on the death of a chieftain, among which the burning of the corpse was one of the least important, I desired to know something more particular of the matter, because I was informed that a great man among them was just then dead. They laid him in a grave, over which they erected a roof, for the space of ten days, until they were ready with the shaping and sewing of clothing for him. When it is a poor man, they get a boat on which they lay him, and so set fire to it; but when a rich man dies, they gather together all his possessions, and divide them into three portions. One third part goes to his family, the second third part is spent for clothing to him, and the third third part to purchase strong drink, to be used on the day when his maids offer their lives, and are burnt along with their lord. This nation is much given to wine and drink, by day and night; and it is not uncommon for one and another of them to die with beakers in their hands. When a chieftain dies, his family ask his maids and men-servants, 'Which of you will die with him?' One of them will say 'I,' and by this promise he is bound, and cannot revoke it; if he should desire to do so, he is not permitted. It is mostly the serving-maids who are willing. So now when the chief whom I have mentioned was dead, they asked his maid-servants, 'Which of you will die with him?' One of them answered, 'I.' Then they charged the other servants to take care of her, and to serve and

<sup>1</sup> This appears to be a mistake. A search through the magazine referred to, which the publishers have kindly caused to be made, has failed to find it.

accompany her wherever she went. Thereafter they occupied themselves with the affairs of the dead man, making clothes for him, and preparing all things necessary; while the maiden every day drank, sang, was lively and merry.

"Then, when the day came on which the dead man and the maiden both should burn,<sup>1</sup> I betook me to the river where his ship was. The ship was already drawn up on the strand, and they were preparing four posts of birch and other trees, and therewith they set up all round images of men<sup>2</sup> (?) and vessels of wood. Then raised they the ship up on the posts, after which the people began to come and go (to jabber) in their foreign speech, which I did not understand.

"The dead man was in the meantime away in his grave, from which as yet they had not taken him. Now came a man with a bed, which he set up in the ship, and provided with mattresses and pillows made of Grecian gold embroidery.<sup>3</sup> Then came an old crone, whom they called the dead man's angel, and laid them to rights on the bed. It was she who took charge of the making of the clothes with which the dead man

<sup>1</sup> It is known that it was an ancient custom in the north that the thralls were killed and burned with the corpse of their master. That widows were subjected to the same custom can scarcely be doubted. Ibn Haukul says:—"The Russians are that people who burn their dead, and with the rich among them it seems their women also burn themselves of their own free will." And Mas'udi also has this statement in regard to the Russians and Slavonians:—"When a man dies his wife is burnt with him; but with wives who die there are never men burnt." We also see from the old mythology that this custom was practised in the North. Nanna was burnt on the ship which served as the pile for her husband Balder's corpse. So, in the Saga also, Brynhilda made herself be burned with Sigurd's corpse.

<sup>2</sup> The Arabic word *Kebâr*, rendered by Frähn "men-like figures," really means vessels or jars of clay; but as the Arab writers would not have been acquainted with the art of the cooper, and therefore would have had no word which would rightly express a wooden vessel, they have used the expression *kebar* (jar) with the explanation "of wood." If my conjecture be right, reference is here made to such wooden vessels as are often found in the grave mounds of the Northmen. In the Mammen-how we find that two such vessels were set above the corpse-kist. We may infer that they would have had such vessels in readiness to place the burnt bones in them, or, as in the Mammen-how, to set them above the cist.

<sup>3</sup> So there was in the Bjerring-how mound a corpse laid on "pillows filled with down," a circumstance which has been once before remarked in connection with the Nedre-how mound, where were found large lumps of feathers with layers of cloth interposed.

was to be dressed, as well as all the needful arrangements. It was she also who was to put the girl to death. I saw her; she was sallow and stern. The multitude had now betaken themselves away to the grave, shovelled the earth off the wooden roof, after which they bore the corpse forth, attired in the shirt in which he had died. I saw him; he was black, in consequence of the cold which prevails in this country. There had been placed in the grave with him intoxicating drink, fruits, and a musical instrument<sup>1</sup> (lute or harp). All this was now taken out. The body, which had as yet undergone no change but change of colour, was now arrayed in drawers, breeches, tunic and boots, with an upper garment or mantle (caftan) of gold-worked cloth, with golden studs, and on his head was placed a cap of gold-worked cloth, encircled with marten's fur.<sup>2</sup> Then they carried him in under the tent<sup>3</sup> which was raised on the ship. Here they laid him on the mattress, and stayed him up with pillows. So brought they the strong drink, the fruits and odoriferous herbs, and set them by his side; they also placed bread, meat, and onions for him. Then came a man forward with a dog, hewed it into two portions, and cast them into the ship. So brought they all the dead man's weapons,

<sup>1</sup> That victuals were placed in the grave with the dead we know from several instances. See Holmberg's "*Nordbon i Hednatiden*." But it does not appear from any other case to have been the custom to place musical instruments with them. It is worthy of remark that provisions were placed also on the funeral pile, but it is not said that the lute or harp was laid there.

<sup>2</sup> As to the splendid clothing of the (dead) man, we are struck by its resemblance to the Mammen find, where there was deposited "some gold-worked cloth," which was believed to have served for a decoration for the head-dress, "considerable portions of very finely-woven woollen stuff, plainly the remnants of a cap, adorned with embroidery of woollen threads. The dress, as it seemed, had been adorned with spangles(?) of gold, and appeared to have had a border of fine fur, of which even now some short tails, ending with long black hairs, are recognisable." Moreover, bands were found both of wool and of silk, some portions of the latter being inwoven with gold thread, remains of silken cloth, and a remarkable belt of silk, excellently woven and inworked with gold, and bordered on the back with a remarkably fine chain stitching. A comparison of this Norse chief's equipment seems to give the same things as were found in the Bjerring-how—the gold-worked stuff for pillows or feather-bed, the outer head-dress of gorgeous workmanship, the woollen cloth for a coat for the corpse, and the fur for his bonnet,—and the resemblance, extends also to the fact of their being of gold-worked embroidery.

<sup>3</sup> The *Volsunga Saga* makes Brynhild Gunnar erect a tent over the pile on which she was to be burnt with Sigurd's corpse.



and laid them by his side. Then they led forth two beasts of burden (packhorses), and made them run till they were covered with sweat. Then they hewed them in pieces with the sword, and cast their flesh into the ship. So brought they forth two oxen, hewed them in pieces, and cast them into the ship. Next they came with a cock and hen, slew them and cast them into the ship.<sup>1</sup>

"In the meantime the woman who was to die kept going backwards and forwards; at last she went into one of the tents . . .

(Here, says Holmboe, I have omitted several words which have an obscene meaning).

"As it was now after mid-day on Friday, they brought the woman away to an object which they had made, in the form of the frame of a door-case.<sup>2</sup> She set her feet on the palms of men's hands, stepped up on the frame, and said some words in their tongue, after which they made her stand down. Then they lifted her a second and third time up, and she went through the same ceremony. Now they handed her a hen, the head of which she cut off and cast away, but the body cast they into the ship.<sup>3</sup> I asked my interpreter what it was that the woman had said. He answered :

<sup>1</sup> Bones of animals are usually found in Norse graves, the remains of the animals slaughtered as funeral offerings, and part of which may likely have been consumed at the funeral feast. Bones of horses (chiefly teeth, see Nicolaysen's *Norske Fornlevninger*), of oxen, of dogs, and of fowls, are frequently found. Thus, we see that the remains which would be found with the Norse chieftain (burnt and buried) on the banks of the Volga, would be the same as those that are usually found in Scandinavian interments—namely, horses, oxen, dogs, and fowls. The resemblance of the grave-mounds on the Volga to those of Scandinavia is further marked by the opening of a grave-mound at Novgorod, by Chodakowski, in 1821, in which, among the ashes, were found two jaw-bones of horses, two of the dog, and the skull of a fowl.

<sup>2</sup> Here the allusion is probably to a scaffolding, resembling the trilitha of ancient Norse burial places, or two stones set on end, with a third lying transversely across them "like the frame of a door." In Sweden many such trilitha are found, which Almuen and Svein Nilson have called *sten-galgar*—stone-gallows. They are also found at Ekornvalla Heath, not far from Skara, nearly two ells high, as related to me by an eye-witness, a doctor, who took part in the great encampment at Axvalla Heath in 1858. In Brittany, according to Keferstein, at Auray alone more than 150 of these are found. Their purpose is unknown. The use mentioned in the text appears to have been to elevate the victim doomed to the pile, so that the people crowding round might see and hear her taking leave of life.

<sup>3</sup> This custom may have given rise to the superstition which Holmberg, in his "*Northmen in Heathen Times*," describes as still existing in Sweden.

'She said the first time, "Lo! I see my father and my mother." The second time, "Lo! here I see seated all my deceased relations." The third time, "Lo! here see I my master seated in Paradise—Paradise, beautiful and green! My master, surrounded by his men and his menials! He calls for me; bring me to him."'

"They convey her thereupon to the ship. She took the two bracelets from her arms and gave them to the crone whom they called the dead man's angel, the same who was to slay her; so took she the rings off her feet, and gave them to the two young girls who had attended on her, and who were the dead man's angel's daughters.<sup>1</sup> They made her next mount the ship, before they should convey her into the tent. Now came men with shields and staves, and brought her a beaker of strong drink.<sup>2</sup> She sang a song on receiving it, and drank it out. Folk said to me that she thereby took leave of her friends. They reached her a second beaker; she took it, and sang a long time. The old crone bade her hasten to empty it and go into the tent where her master was. I saw her; she was out of herself. In attempting to go into the tent, she stuck by the head in the space between the tent and the ship. The old hag caught hold of her by the head and dragged her in with her, while the men commenced to beat their shields with their staves, that her shrieks might not be heard, and so frighten other girls and make them unwilling to die with their

<sup>1</sup> Indian women who were burned with their husbands gave away their ornaments to their friends. See Ward's *View of the History, &c., of the Hindoos*, 3d edit. vol. ii. p. 99.

<sup>2</sup> It was also the custom in India to make the victims doomed to the pile intoxicated before they were sacrificed. The Brahmins say that widows and concubines willingly share the pile with their lord's corpse. But this is not confirmed by the evidence of Europeans. Ward, in his "*View of the History of the Hindoos*," says: "The Brahmins drive the trembling, half-dead widow round the pile, and cast her like a log of wood by the side of her dead husband; they press her down with bamboo poles, and hold her down with them till the fire has bereft her of the power to rise up and run away. Her shrieks are drowned by a tremendous beating of drums." Eger-ton, in "*A Winter's Tour in India*," mentions that, at the burning of the Queen of Nepal's body, which took place immediately before his arrival, according to some accounts five, and according to others three, young females were burned with the corpse. It was given out that they had done it willingly, but several Hindoos insisted that it never was done willingly, but that they stupefied them with opium and bhang, and bound them to the pile.

lords. Now went six men into the tent,<sup>1</sup> . . . and laid her by the side of her lord. While two men held her hands fast, and two her feet, the woman whom they called the dead man's angel wound a cord round her neck, and gave the ends to two men, so that they should pull them, while she herself took a large broad-bladed knife, struck it in between her ribs and drew it out again, and the men choked her with the cord till she was dead.

"Then the dead man's nearest relative stepped forth, took a fire-brand and kindled it.<sup>2</sup> Naked, and walking backwards, he approached the ship, holding the brand in one hand, and both his hands behind his back, until the wood under the ship was beginning to burn. Then every man present straightway brought more wood. Each one carried a stick, the one end of which had been kindled in the fire, and cast it into the blazing wood. The wood straightway caught fire, and then they applied it to the ship, with the tent, the dead man, the girl, and all that was in the ship. A heavy storm, which was just beginning to rage, fanned the flames, and drove them aloft to a great height. A Russian (Norseman) was close by my side, and I heard him speak to my interpreter who was by him. I asked what he had said. 'He says,' replied the interpreter, 'that you Arabs are fools, because you take the man whom you most have loved and honoured, and put him down into the earth where vermin and worms devour him ; we, on the contrary, burn him up in a twinkling, and he goes straight to Paradise.' The Russian thereupon burst into a hearty laugh, and added, 'His god seemed to have a strong affection for him by the gale he raised to give him a speedy dismissal.' In reality, it was but a short time when the ship, the pile of wood, the girl, and the dead man, had vanished into ashes. They erected on the spot where the ship had been drawn up on the land something resembling a round hillock,<sup>3</sup> on whose midst they set up a stout birch trunk.<sup>4</sup> On it they carved the

<sup>1</sup> Here some words are also omitted for the reason previously mentioned.

<sup>2</sup> In India also the pile is kindled by a near relation, and the kindred standing by when the pile is fired take seven pieces of wood, break them asunder, and, with the back turned towards the pile, cast them into it.

<sup>3</sup> The Arab seems not to have been present at the throwing up of the grave-mound.

<sup>4</sup> The reason why they set up a birch tree post on the grave-hill was very likely because they could not find in the neighbourhood the customary bauta-stone, or if a

names of the dead man and of the Russian (Norse) King. Thereafter they all went away."

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Ibn-Fozlan's account of the funeral customs prevailing in the region of the Volga at the period when he visited it is curiously corroborated by a passage in the Saga of King Olaf the Holy (Olaf Haraldsson), who reigned in Norway from A.D. 1015 to A.D. 1030. It is there incidentally mentioned, in describing an expedition which King Olaf sent to Bjarmaland, the region lying between the White Sea and the Volga, that—

"It was so established in this land, that when a rich man died, all his moveable goods were divided between the dead man and his heirs. He (the dead man) got the half part, or the third part, or sometimes less, and that part was carried out into the forest and buried—sometimes under a mound, sometimes in the earth, and sometimes even a house built over it."

As an additional illustration of the curious customs connected with the burning of the dead among the northern nations, I have appended the following account of the funeral ceremonies of the Estonians (the "*Æstiorum gentes*" of Tacitus,—"*quibus ritus habitusque Suevorum, lingua Brittanicæ proprius*"), whose territories lay to the east of the mouth of the river Vistula. This account is taken from King Alfred's Saxon version of Orosius, translated by Dr Ingram.<sup>1</sup> King Alfred is describing the manners of the Estonians, from the account of Wolfstan, who had seen them, and the narrative proceeds to the following effect:—

"There is also this custom with the Estonians, that when any one dies, the corpse continues unburnt with the relatives and friends for at least a month, sometimes two; and the bodies of kings and illustrious men, according to their respective wealth, lie sometimes even for half a year before the corpse is burned, and the body continues above ground in the house; during which time drinking and sports are prolonged till the day in which the body is consumed. Then, when it is carried to the funeral pile, the substance of the deceased which remains after these drinking

suitable stone could have been found, that the dead man's followers could not remain so long as would be necessary to carve the Runic inscription in stone.

<sup>1</sup> Dr Ingram's Inaugural Lecture on the Utility of Anglo-Saxon Literature, as quoted in *Archæological Journal*, vol. v. p. 290.



festivities and sports is divided into five or six heaps, sometimes even more, according to the proportion of what he happens to be worth. These heaps are so disposed, that the largest heap shall be about one mile from the town, and so gradually the smaller at lesser intervals, till all the wealth is divided, so that the last heap shall be nearest the town where the corpse lies.

"Then all those are to be summoned together who have the fleetest horses in the land, for a wager of skill, within the distance of five or six miles from these heaps, and they all ride a race towards the substance of the deceased. Then comes the man that has the winning horse towards the first and largest heap, and so each after the other, till the whole is seized upon. He procures, however, the least heap who takes that which is nearest the town; and then every one rides away with his share, and keeps the whole of it. When the wealth of the deceased has been thus exhausted, then they carry out his corpse from the house and burn it, together with his weapons and clothes; and generally they spend the whole substance by the long-continuance of the body within the house, together with what they lay in heaps along the road, which the strangers run for and take away.

"It is also an established custom with the Estonians that the dead bodies of every tribe or family shall be burned; and if any man findeth a single bone unconsumed they shall be fined to a considerable amount."

In the Capitulary of Charlemagne, A.D. 785, the practice of burning the dead is forbidden as a capital offence:—

*"Si quis corpus defuncti hominis secundum ritum Paganorum flamma consumi fecerit, et ossa ejus ad cinerem redigerit, capite punietur."*

Before finally quitting this curious subject, it may not be out of place to append a few notices regarding the origin of cremation,<sup>1</sup> the customs by which it was characterised, and the latest instances on record.

The origin of cremation appears to have been due to the notion of purification by fire. It is noticed by Eustathius that Euripides says that the body of Clytemnestra was purified by fire. Iamblichus says that fire destroyed whatever it found material in the sacrifice, purified and released

<sup>1</sup> See a learned paper on this subject, by Rev. Dr John Jamieson, in the Transactions of the Royal Society of Edinburgh, vol. viii. p. 83.

it from the bonds of matter, and by reason of its purity made things fit for the fellowship of the gods; and, according to Lucan, the power of flame carried the soul into the eternal world.<sup>1</sup> Compare with this the lines of Silius Italicus describing the funeral of Paulus:—

“Recens crepitantibus undique flammis,  
Æthereas anima exultans evasit in auras.” *Lib. x.*

Eustathius expressly states that “it was a custom among the Greeks to burn their dead, which custom still remains among some northern barbarians; and they do this to indicate that the spiritual part of man, being carried upwards as in a chariot of fire, rises with heavenly objects, but that the earthly remains behind.” It is curious, as illustrative of the notion of purification by fire, that the Greeks and Romans forbade the cremation of the bodies of those who had been killed by lightning, while also it is said that the funeral pile of Hercules was kindled by the thunderbolt of Jove. The same notion of purification appears to have actuated those who gave themselves alive to the flames. This is the reason given by Porphyry: “They cast their body into the fire that they may separate the soul from it in a state of the greatest purity.”

Quintilian, speaking of the soul, says, “Quoties humani pectoris carcerem effugerit, et exonerata membris mortalibus, levi se igne lustraverit petere sedes inter astra.”

According to Pliny,<sup>2</sup> the ancient Romans practised inhumation, although it would seem from the prohibition, which Plutarch says Numa issued against the burning of his body, that cremation must have been practised in his time. Cicero<sup>3</sup> states that the Greeks, during the reign of Cecrops, practised inhumation, and Elian<sup>4</sup> attests the same thing of the Athenians. Tertullian, remarking that some of the Gentiles, in the early ages of Christianity, disapproved of the method of burning, because they wished to spare the soul, which hovered over the body after death, adds, “But we have another reason, that of piety, not as flattering the reliques of the soul, but as detesting cruelty even to the body, because being itself man, it does not deserve to be subjected to a penal death.”<sup>5</sup> He also ridicules the common custom among the heathen, of first burning their

<sup>1</sup> Pharsalia, lib. ix. 9.

<sup>2</sup> Hist. Nat., lib. viii. c. 54.

<sup>3</sup> De Leg. lib. ii.

<sup>4</sup> Var. Hist. lib. v. 14, vii. 19.

<sup>5</sup> De Anima, c. 51.

dead, and then cooking the funeral feasts on the same fires.<sup>1</sup> We obtain the curious information from Minucius Felix, that the heathens taunted the Christians with this, that they execrate the funeral pile, and condemn sepulture by burning, as if it precluded the possibility of the resurrection. To which Minucius replies, that they feared no injury by this kind of sepulture, as the heathen believed, but they adhered to the custom of inhumation as the more ancient and the better mode.<sup>2</sup>

That there is ground for believing inhumation to have been the earlier mode of sepulture, may be inferred from the fact that, among the Institutes of Lycurgus, it is enacted that the dead should be deposited in the ground, wrapped in scarlet cloth, and surrounded with olive leaves. The Greeks ascribe the introduction of cremation to Hercules; and it was not a new thing among them in the time of the Trojan war. It is probable, however, that both customs prevailed side by side for a long time, until the one gradually gave way before the popular predilection for the other. That they were both in use in the time of Socrates may be inferred from the language ascribed to him by Plato, when he says that, after he is dead, it will be a matter of complete indifference to him whether he is burned or buried.

It is to be remarked, however, that the presence of charcoal in graves is not necessarily an evidence of the cremation of the body. Instances have been remarked of the abundant presence of charcoal in and about cists containing urns of the food-vessel type, deposited with unburnt skeletons. Durandus<sup>3</sup> mentions the placing of embers and incense in Christian graves, and also of the placing of charcoal in the grave to serve as an imperishable protest against using the soil of the grave for secular purposes.<sup>4</sup> The old liturgists allude to the placing of charcoal and incense,

<sup>1</sup> "Ego magis ridebo vulgus, tunc quoque quum ipsos defunctos atrocissime exurit, quos postmodum gulosissime nutrit, iisdem ignibus et promerens et offendens."—*De Resurrectione*, c. 1.)

<sup>2</sup> "Veterem et meliorem consuetudinem humandi frequentamus."—*Min. Fel. Octavius*, pp. 327–8, edit. Ludg. 1672.

<sup>3</sup> "In testimonium quod terra illa in communes usus amplius redigi non potest; plus enim durat carbo sub terra quam aliud."—*Lib. vii. c. 35*.

<sup>4</sup> See also Cochet. *Normandie Souterraine*, I. pp. 198, 253, 304; Kemble, *Horæ Ferales*, pp. 98, 104; Wylie, *Fairford Graves*, p. 29; Professor Rolleston, *Frilford Graves*, in *Archæologia*, vol. xlii. part ii. p. 426.

as well as earthen vessels containing holy water, in the graves of the dead in the 12th and 13th centuries. Oberlin says this custom ceased in the 13th century; but Wylie is of opinion that recent researches have proved its existence in France down to the 16th century.<sup>1</sup> The custom of placing earthen vessels in graves has come down almost to our own time in remote districts such as La Bresse and Morvan in France.<sup>2</sup>

The funeral feast held at the open graves of the departed was a subject of scandal among the early Christians from the excesses which arose out of it, and is frequently denounced in the writings of the early Christian Fathers.<sup>3</sup> In the collection of the Canons of the Greek Synods, by Martin, Bishop of Braga, who died in A.D. 580, it is said, "Non oportet, non liceat Christianis prandia ad defunctorum sepulchra deferre, et sacrificari mortuis."

The practice of burying with the dead the objects of daily use during life has also survived to very recent times. Weinhold states<sup>4</sup> that, in some remote districts in Sweden, the tobacco pipe, the pocket knife, and the filled brandy flask, were placed in the grave by the relatives of the deceased, and Keysler mentions that, in his time, the Lapps buried with the dead man his bow and arrows, his hatchet, and his flint and steel.<sup>5</sup>

[When the foregoing was passing through the press the following account of the cremation of the body of the Maharajah of Judpore, who died on the 13th February 1873, was going the round of the newspapers. It seems to me to be of sufficient interest to warrant its insertion here by way of contrasting an authentic account of cremation in the 19th century<sup>6</sup> with that of the 10th century. The writer, a native, dating from Judpore, February 21st 1873, says :—

<sup>1</sup> Proc. Soc. Antiq., Lond. 1853, p. 47.

<sup>2</sup> Cochet, *Archæologie ceramique*, 1860, p. 1.

<sup>3</sup> See *Archæologia*, vol. xlii. part ii. p. 424.

<sup>4</sup> *Altnordischen Leben*, p. 493, cited by Prof. Rolleston, *Archæol.*, vol. xlii. p. 425

<sup>5</sup> *Keysler Antiquitates Septentrionales*, p. 173.

<sup>6</sup> Curiously enough, the same newspaper which contained the account of the cremation of the Rajah's body, contained also an account of the burning of the bodies of the captain and four sailors of the brig *Champion* of Banff, at Madeira. The vessel had been driven ashore, and the men were drowned. The bodies came ashore, but as the Roman Catholic law of the island did not permit their interment, they were coated with tar and publicly burned by the authorities, in spite of the remonstrances of the resident English.



“On the 13th inst., the reigning Maharajah Takht Singh departed this life at the age of 52, after a brilliant reign of 28 years. Immediately after his death, preparations were made for the ceremony of cremation. Early in the morning his corpse was dressed in the royal robes, and decked out with jewellery to the value of one lakh and 50,000 rupees (£15,000). Placed on a sedan chair in a sitting posture, the deceased Rajah was then carried to the appointed spot, followed by the usual cavalcade and a band of musicians. In the front of the procession were two elephants laden with gold and silver coins to the amount of one lakh and 25,000 rupees (£12,500), which were scattered at every hundred paces among the spectators. In such a dense crowd the struggle to obtain possession of the coins was something terrible to witness. At a distance of six miles from the capital the corpse was brought to the Rajah's ancestral place of cremation. A large funeral pile had been constructed of sandal wood, and quantities of combustible materials, and upon this the corpse, fully attired with all the jewellery, and wrapped in Cashmere shawls, was reverently laid. The Brahmins set fire to the pile, and as the flames darted up in the air, such a deafening wail was uttered by the surrounding crowd that for a moment I was fairly stunned. After a short time I tried to make my way near the pile, but the heat was so terrific that it was impossible to approach within a hundred yards of it. In the course of a few hours the corpse was entirely consumed, not the slightest trace of it remaining. The embers were left for two days to cool, after which the ashes were brought back to the palace, with great pomp and ostentation, and will in due time be carefully sent to the holy places. The deceased Rajah had a considerable number of wives and concubines, many of whom expressed a strong desire to immolate themselves on the funeral pile of their late lord—some because they were really grieved at his loss, and others no doubt because it was considered respectable. Thanks, however, to the influence of the British rule and the interference of the Governor-General's agent, it was not practicable to revive the barbarous custom of human sacrifice. On previous similar occasions as many as a dozen women were obliged to submit to self-immolation, but on this occasion everything passed off quietly, and without any injury to human life.”]

## VI.

NOTICE OF A SILVER CHAIN OR GIRDLE, THE PROPERTY OF THOMAS SIMSON, OF BLAINSLIE, ESQ., BERWICKSHIRE; ANOTHER, IN THE POSSESSION OF THE UNIVERSITY OF ABERDEEN; AND OF OTHER ANCIENT SCOTTISH SILVER CHAINS. BY JOHN ALEXANDER SMITH, M.D., V.P.S.A. SCOT. (PLATES XXXVII., XXXVIII.)

[On account of unavoidable delay in preparing the illustrative plates for this Communication, it has been transferred to the next volume of the Proceedings.]

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MONDAY, *June 10th*, 1872.

REV. W. LINDSAY ALEXANDER, D.D., in the Chair.

On the recommendation of the Council, GEORGE STEPHENS, Esq., F.S.A., Professor of English Language and Literature, University of Copenhagen, author of the "Runic Monuments of Scandinavia and England," &c., was duly elected an Honorary Member of the Society of Antiquaries of Scotland.

A ballot having been taken, the following Gentlemen were elected :—

As a Fellow of the Society—

EDWARD ALEXANDER PRENTICE, Esq., Montreal.

As a Corresponding Member—

Rev. J. G. MICHIE, A.M., Migvie, Aberdeenshire.

The following Donations to the Museum and Library were laid on the table, and thanks voted to the Donors :—

(1.) By Rev. NORMAN MACLEOD, D.D., of the Barony Parish, Glasgow.

Tortoise-shaped Brooch of bronze,  $4\frac{1}{2}$  inches long,  $2\frac{3}{4}$  inches broad, and  $1\frac{1}{2}$  inches in height. It consists of two oval shell-like or bowl-shaped castings of bronze, one of which fits over the other. The under part, which is the largest, has a flat rim, nearly a quarter of an inch wide, with band of intertwined lacertine ornamentation in panels, very

rudely executed; above this the surface is plain, and has probably been gilt to be seen through the open work of the upper shell, which fits closely round the margin of the ornamental band on the lower half of the brooch. In the centre of the upper case is a raised boss, pierced with four openings. Two similar bosses are placed at the extremities of the longer and shorter diameters of the oval. Half-way between each pair of these are spaces for four beads or studs, probably of amber or glass, but now lost, having holes for fastening the studs by means of rivets passing through the centre of each. One of these rivets remains *in situ*, and is about  $\frac{3}{8}$ ths of an inch in length. From the centre boss to the studs last mentioned, and from the studs to the two bosses at the extremities of the long diameter of the oval, there are small channelled depressions in the metal, in which are laid side by side three rows of silver chain-work, formed by



Bronze Pin from Tiree.

twisting a very fine wire of two strands. The chain passes along the channel, enters a small hole at the one side of a stud, passes underneath and comes out on the other side; then along another channel, underneath the boss, and so back to the centre by the opposite stud in the same way. These chains thus form a kind of double diamond figure on the surface of the brooch. The whole upper shell, in the interspaces between the bosses and studs, is pierced with open work, apparently for the purpose of showing the richly gilt surface of the lower shell through the openings. It is also elaborately ornamented with chased work, corresponding to that of the lower border. This brooch was found in the Island of Tiree. Similar brooches are in the Museum from Orkney, Caithness, Islay, and also from England, and from Denmark and Norway. They are distinctly Scandinavian, and the British examples belong to the period of the Scandinavian incursions into this country from the 8th century.

Bronze pin,  $6\frac{3}{4}$  inches long, with open lozenge-shaped head, found with the brooch in the island of Tiree (see the accompanying woodcut).

(2.) By Mr ROBERT JARDINE, 3 Sciennes Hill Place, Edinburgh.

Flat Powder-Horn, 12 inches long, 4 inches wide at the widest part, and 1 inch in thickness. It has a mounting of lead round the mouth,



Carved Powder-Horn.

and the bottom, which is of wood, and has two projecting loops for suspension, is rivetted in with brass pins. The convex back of the horn



is plain, the concave edge bearing three lines of an inscription as follows :—

SECK·ME·NOT·I·PRAY·THE·MY·MESTER·VIL·DENEY·THE·FAT·LES.

APRYL 4·YEAR·OF GOD 1694.

AND·BOOY. FEAR GOD IN HEAT.

On the upper part of one of the flat sides are the initials B B, and below them I G. Both the flat sides are covered with a beautifully executed ornamentation of engraved interlaced work and geometrical patterns, as represented in the accompanying figures.

(3.) By Mrs SCOTT, Mansion House Road, through GEORGE SIM, Esq., F.S.A. Scot., Curator of Coins.

Ring Brooch of silver,  $2\frac{1}{4}$  inches diameter, formed of a circular flat band,  $\frac{1}{4}$ th of an inch wide, and about  $\frac{1}{8}$ th of an inch thick. The pin,



Inscribed Silver Brooch,  $2\frac{1}{4}$  inches diameter.

which is also of silver, and of nail-like form, is looped round an indentation in the Brooch. In similar brooches of bronze in the Museum, the pin is attached at the junction of the two ends of the band bent round

to form the Brooch, and the loop of the pin conceals the junction ; but in this case the two ends are either strongly soldered, or the ring has been made from a solid piece of metal. The front of the Brooch bears the following inscription in characters apparently of about the 12th century :—

**IHESUS NAZARENUS REX: NAZAR.**

A small cross marks the beginning and end of the inscription. The back of the Brooch is ornamented by being divided into a series of triangular spaces, which are alternately plain and filled in with parallel lines, as seen on the acus of the Brooch (see fig.), on which the same ornamentation is continued.



Inscribed Bronze Brooch,  $2\frac{3}{4}$  inches diameter.

A Bronze Brooch, bearing an inscription which seems to be an abbreviation of the same formula, is here figured for the sake of comparison. It was found, with human bones, on the upper part of the mound covering the ruins of the Broch of Yarhouse, Caithness (see p. 244, and *Archæol. Scotica*, vol. v. p. 141).

There are in the Museum other three silver Brooches of this form, bear-

ing similar legends, and somewhat similar in this style of lettering. One found at Canonbie, Dumfriesshire, has the inscription—IHESUS · NAZARENUS · REX ; another, found in the ruins of the old church of Middleby, Annandale, has IHESUS · NAZARENUS · REX · IUDE. A third, the locality of which is unknown, has on the one side IHESUS : NAZARENUS : REX : JUDEORUM ; and on the reverse AVE · MARIA · GRACIA · PLENA · ORA.

(4.) By Colonel GREENHILL GARDYNE, of Glenforsa, through Capt. T. P. WHITE, R.E., F.S.A. Scot., of H.M. Ordnance Survey.

Urn of the drinking-cup type,  $6\frac{1}{2}$  inches high, and 6 inches wide at the mouth (much broken), ornamented with narrow parallel bands of chevrons and short intersecting lines. The broad bands between these are filled in with a series of acutely-pointed triangular spaces, alternately plain, and filled with a chevron pattern. The lines forming the long equal sides of these triangles appear to have been stamped with the teeth of a comb.

Fragment of another urn of similar character, but different in its ornamentation, which consists of angular scorings all over the surface, and towards the top a band of triangular spaces alternately plain and filled with parallel lines.

Two Fragments, apparently of a bronze dagger, found with the urns.



Polished Stone Object found in Mull,  
 $3\frac{1}{4}$  inches long.

Polished stone object of greenstone,  $3\frac{1}{4}$  inches in length,  $1\frac{1}{4}$  inches in breadth, and decreasing in thickness from about  $\frac{1}{8}$ th of an inch in the middle towards the two ends, which are not more than  $\frac{1}{16}$ th of an inch in thickness (see figure). It is pierced by two holes, one placed near each end, and on opposite sides of what would be the medial line lengthwise of the upper surface of the stone. The holes, which are scarcely  $\frac{1}{8}$ th of an inch wide, are countersunk on both sides, but greatly more so on one

side than on the other. These were all found on the farm of Callachally, in Glen Fersa.

There are several stone objects of similar character in the Museum, some being almost of the same form. Various conjectures have been made as to their purpose. Some of them have been thought to be wrist-guards to protect the wrist from the string of the bow.

(5.) By the Rev. Z. M. HAMILTON, D.D., Bressay, Shetland.

Ladle-like vessel of steatite, 8 inches diameter across the bowl, and 3 inches in depth, having a handle 6 inches in length.

Broken portion of the bowl of a similar vessel of steatite, also 8 inches in diameter.

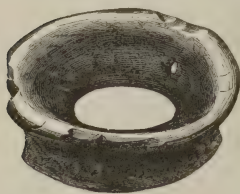
Broken portion of the bowl of a ladle-like vessel of steatite, 6 inches diameter, and  $2\frac{1}{2}$  inches in depth.

Portion of the handle of a similar vessel of steatite,  $4\frac{1}{2}$  inches in length.

These were all found in a moss in the island of Unst, along with the ladle-like vessel of a similar character presented by Thomas Edmonston of Buness, Esq., and referred to in his communication, at p. 286.

(6.) By Mr ANDREW PURDIE, West Mains, West Calder.

Ring of shale of peculiar form, being shaped somewhat like the horn frame of a watchmaker's eye-glass,  $1\frac{1}{2}$  inches in diameter. It was found in ploughing on the farm of West Mains, West Calder. A ring almost exactly similar in form, but slightly larger (see figure), was found near some long stone cists at Yarow Kirk, Selkirkshire (Proc., vol. ii. p. 484, and vol. vi. p. 62).



Ring of Shale found near Yarow Kirk,  $1\frac{1}{8}$  inches in diameter.

(7.) By PETER REID, Esq. Glasgow.

Cast in brass of an old Highland Brooch, 6 inches diameter, ornamented with circles of holes drilled in the metal, and with interlaced and other patterns, slightly engraved.

(8.) By JOHN BERRY of Tayfield, Esq., near Dundee.

"Trot-cosy" or hood of blue cloth, with large flaps to cover the neck



and shoulders. Fitting closely to the head, it was worn under the hat when riding, and buttoned over the mouth. This hood belonged to the late John Berry of Tayfield in the early part of the 18th century.

(9.) By WILLIAM TAAP, Esq., Teviot Row.

Hardhead of Francis and Mary, 1551, found in a garden at St Andrews. This is the coin referred to by the late Mr Lindsay in the second supplement to his work on the "The Coinage of Scotland," p. 18, where he says:—"Mr Taap has added to my catalogue of Billon coins a very singular hardhead of Francis and Mary; its obverse differs from that of No. 76 of first supplement only in having one R. after D. G.; but the reverse exhibits the extraordinary date of 1551; for this my friend Mr Sainthill has accounted by supposing that an old reverse die of Mary, with 1551, had been used with a new obverse one of Francis and Mary, as we find a similar instance of in Dublin and London pennies of Edward I., and with this opinion I perfectly coincide."

(10.) By GEORGE SIM, Esq., F.S.A. Scot., Curator of Coins.

An oval Medallion of bronze,  $2\frac{5}{8}$  inches in length, showing in high relief the busts of Hercules and Omphale.

(11.) By the REPRESENTATIVES of the late Mr R. INNES SHEARER, Corr. Mem. S.A. Scot.

Forty Sketch Plans and Sections of Mounds, Cairns, Brochs, &c., in Caithness.

(12.) By Mr DAVID TAYLOR, through DAVID LAING, Esq., For. Sec.

The Funerals of Patrick Forbes, Bishop of Aberdeen—the original edition. "Aberdene: Printed by Edward Raban, 1635. 4to."

(13.) By the Author, JOHN ANDERSON, M.D., Medical Officer and Naturalist to the Expedition, Calcutta.

Report on the Expedition to Western Yunan *via* Bhamo. Calcutta, 1871. 8vo.

(14.) By the SOCIÉTÉ DES ANTIQUAIRES DE FRANCE.

Memoires de la Société. Tome trente-deuxième. 8vo. Paris, 1871.

(15.) By the BERWICKSHIRE NATURALISTS' CLUB.

Proceedings of the Berwickshire Naturalists' Club, 1871-2.

(16.) By the Editor, Rev. CHARLES ROGERS, LL.D., F.S.A. Scot.

The Staggering State of Scottish Statesmen, from 1550 to 1658. By John Scot of Scotstarvet. Edinburgh, 1872. 8vo.

The following Communications were read :—

### I.

NOTICE OF AN ORIGINAL PRIVY SEAL DOCUMENT RELATING TO THE INVASION OF SCOTLAND BY KING HENRY THE SEVENTH, IN THE YEAR M.CCCC.XCVII. BY DAVID LAING, Esq., FOR. SEC. S.A. SCOT. (PLATE XXXV.)

The original document now exhibited I obtained a few weeks ago from a London sale of Autographs. It is a Privy Seal with the King's sign manual, dated at Westminster the 1st of December. Upon examining it to ascertain its object and precise date, it was easy to perceive that it must have been the year 1496, and that it was connected with the history of Perkyn Warbeck. In itself it may be of no special historical importance; yet, as a curious paper of its kind, illustrating an episode of Scottish history, it seems worthy of a brief notice in the Society's Proceedings.

The success of Henry of Lancaster, Earl of Richmond, on the field of Bosworth, August 22, 1485, placed him on the throne of England as King Henry the Seventh; and in January following, his marriage with the Lady Elizabeth, eldest daughter of Edward the Fourth, formed a union of the two families of Lancaster and York, and terminated the intestine wars of the Red and White Roses. Among the various conspiracies against Henry's title, by adherents of the York faction, the most troublesome was that of Perkyn Warbeck, described as "a bold and comely youth," who (whatever may have been her motives) was encouraged by Margaret Duchess of Burgundy, and sister of Edward the Fourth, to personate Richard, Duke of York, who was murdered in the



KING HENRY THE SEVENTH.



ПРИЛОЖЕНИЕ

1871



Tower of London, along with his elder brother, Edward the Fifth, in June 1483. In this way Perkyn claimed to be son and lawful heir of King Edward the Fourth. His history, however, is well known, and I shall only refer to him in connexion with the affairs of Scotland.

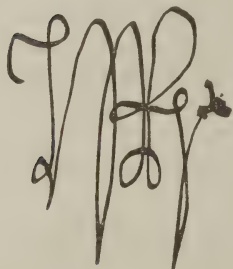
It happened that King James the Fourth was induced, partly by the Duchess of Burgundy, to espouse the claims of Warbeck, who came to Scotland in the month of November 1495. He was received as *Prince of England*, and obtained, what was a large sum in those days, a monthly allowance of L.112, for his support, and was also permitted to contract a marriage with Lady Katherine Gordon, daughter of Alexander, Earl of Huntly, who was nearly related to the Royal family.

In the following year, 1496, the young Scottish King, who always exhibited a noble spirit of chivalry, partly misled by an ill-founded notion that the English people were ready to welcome this pretended Duke of York when he appeared amongst them, raised a considerable force and marched into Northumberland. This was in September 1496, the proclamation being issued in the name of "Richard Duke of York, true inheritor of the crown of England." It has been printed in various historical works, including Lord Bacon's "Life and Reign of Henry the Seventh." He says:—

"But Perkyn's proclamation did little edifie with the people of England; neither was he the better welcome for the company he came in. Wherefore the King of Scotland, seeing none came in to Perkin, nor none stirred anywhere in his favour, turned his enterprise into a rode [raid]; and wasted and destroyed the country of Northumberland with fire and sword. But hearing that there were forces coming against him, and not willing that they should find his men heavy and laden with booty, he returned into Scotland with great spoils, deferring further prosecution till another time."

This inroad, and the devastations that were committed by the Scottish troops, could not be overlooked; and until a Parliament should be summoned, the King was authorised by his "great Council" to borrow a sum of L.40,000 to meet the expenses, in addition to what he himself had already "advanced from his own coffers." Of this subsidy, the city of London contributed L.4000; but apparently it was chiefly to be raised by borrowing from wealthy citizens, in different counties, sums limited to

L.20 each. The following document is one of these, in a general form of requisition, the names of the counties and persons here printed in italics left blank, and supplied in a different hand :—



BY THE KING.

TRUSTY and welbeloued We great yow wele/ And for the Revenging of the great crueltie and dishonour that the King of Scottis hath doon vnto vs, oure Reame, and subgiettis of the same as oure Commissioners in *our Countie of Oxenford* where ye be inhabited shall shewe vnto yow at lengthe/ We lately in oure great Counsaill of Lordis Spirituall and Temporall of Jugis Sergeantis in our lawe/ and of others summe headwisemen of every Cite and good Towne of this our lande, haue at thair instauncis and by thair aduisis, determynd vs to make by see and by land two Armees Roiall for a substanciall Werre to be contynued vpon the Scottis vnto suyche tyme as we shall Invade the Reame of Scotland in our owne personne/ And shall haue with Goddis grace revenged thair great outragis doon vnto vs oure Reame and subgiettis forsaide/ so and in suyche wise as we trust the same our subgiettis shall lyve in rest and peax for many yeres to come/ The Lordis and others of our saide great Counsaill considering wele that the saide substanciall werre can not be born but by great sommes of redy money haue prested vnto vs every one of them for his part great sommes of money contented besidis that we of our self haue avaunced in redy [money] of our owne cofers. Yet nathelesse fourty M. li. [40,000] poundis more, as our saide Counsaill hath cast it/ must of necessite be borowed and avaunced in redy money of others oure lovyng subgiettis for the furniture of this matter/ And bycause as we here ye be a man of good substaunce, we desire and pray you to make lone vnto vs of the summe of

*twenty poundis* Wherof ye shalbe vndoubtedly and assuredly repaied in our receite at the Feast of Saynt Andrew next comyng withowte eny maner your cost or charge for the same. This money must be brought to oure receite and there resceyvid by the tellers of the same On thys side the Feast of Candilmasse next comyng withoute any further traite or delaye of whome ye shall tak owte a bill of Mutuum for your just and true repayment thereof. It shalbe in your libertie aftir ye shall ons goon through with oure saide Commissioners to whome we pray you to yeve full and fast credence in this caas/ whether ye will come and bryng the same your selfe or ellis sende some trusty frende or servant of youres to deliuer it before the said Candilmasse at our saide receite and to bring to yow the said bille of Mutuum Or ellis of trust your saide lone to be deliuered to our saide Commissioners and they to bryng the saide bille of Mutuum for your indempnite in that behalfe. This is a thing of so great weight and importaunce as may not be fayled/ And therefore fayle ye not herof for your saide part eftsones We pray yow as ye tendre the good and honour of vs and of this our Reame/ and as ye tendre also the wele and suertie of your selfe. Yeven vnder our Signet at our Paleis of Westminster the first day of Decembre.

*Thys Man ys agreid to pay x li. but not  
xx li. and therefore we Commysseoners  
remyt hym over to the Consell—how  
be yt the report of the neightburs he ys  
sufficient to pay the holle xx li.*

(*Indorsed*)—To our trusty and welbelouyd  
subiette John Wylmote of our towne of  
Chyslyngton. Oxon.

Mr Spedding, in his valuable edition of Lord Bacon's Works (vol. vi. p. 174), gives the chief portion of a similar privy seal addressed to a gentleman in the county of Hereford, for the like sum of L.20, preserved among the Cottonian MSS. (Titus, B. v. f. 145.)<sup>1</sup> He also says:—

“Among the records preserved in the Rolls-house are to be found

<sup>1</sup> A few weeks later, passing through London, I took the opportunity of examining this document in the British Museum, and found that it corresponded exactly with the above, excepting of course the name of the person addressed, and of the

two more of these privy seals (see B. v. i. Nos. 32, 33), as well as an account of all the sums borrowed (see B. v. 20); amounting in all to L.57,388, 10s. 2d. This latter document is inaccurately described on the cover as an account of the *Benevolence*, A° H. 7. 12°. It should have been called *Loan*.

"I have not been able (Mr S. adds) to ascertain the exact period at which the Scotch incursion took place, but it seems probable that this hurried borrowing of money (partly for immediate use and partly perhaps as a collectoral security for the promised Parliamentary grant) followed immediately upon it, while the alarm and resentment were fresh."

As to the date, there can be no doubt that it was September 1496.

In the Privy purse expenses of Henry the Seventh, one item connected with this episode in his history is:—

1496. December 5.—Delivered by the King's command-  
ment, and sent into the North for  
the wages of the King's armye there, L.3000

On hearing that the Scots had already retired, the English King for this time countermanded the progress of his troops; but in order to quiet the complaints of his northern subjects, he summoned a Parliament to meet at Westminster on the 16th January [1496-7]. Lord Bacon, in reference to their proceedings, says:—

"The winter following, being the twelfth year of his reign, the King called again his Parliament; where he did much exaggerate both the malice and the cruel predatory war lately made by the King of Scotland. That that King, being in amity with him, and no ways provok'd, should so burn in hatred towards him as to drink of the lees and dregs of Perkin's intoxication, who was everywhere else detected and discarded; and that when he perceived it was out of his reach to do the King any hurt, he had turned his arms upon unarmed and unprovided people, to

county, nor is there any postscript pleading poverty. At the same time, having occasion to refer to the Harleian MSS., No. 6986, I found another, with the king's sign manual, to the same effect for L.20, addressed to Thomas Bosvian and James Carew of Cornwall. In the Museum printed Catalogue this paper is erroneously entered as in the reign of King Henry VIII. From the number of copies that must have been issued, various others are likely to be still in existence.



spoil only and depopulate, contrary to the laws both of war and peace : concluding, that he could neither with honour, nor with the safety of his people, to whom he did owe protection, let pass these wrongs unrevengeed. The Parliament understood him well, and gave him a subsidy, limited to the sum of one hundred and twenty thousand pounds, besides two fifteens; for his wars were always to him as a mine of treasure, of a strange kind of ore—iron at the top and gold and silver at the bottom. At this Parliament (for that there had been so much time spent in making laws the year before, and for that it was called purposely in respect of the Scottish war) there were no laws made to be remembered.”

Other payments by Henry VII. occur in his privy purse expenses :—

1497. March.—Delivered and sent by the King’s command-	
ment to York, Durham, and Newcastle,	L.4000
May.—Delivered and sent by the King’s command-	
ment to Berwick,	6300
July 1.—Delivered and sent by the King’s command-	
ment northward to the King’s men,	12,000

The result of these preparations was, that Henry in July 1497, sent his forces, under command of the Earl of Surrey (his own presence elsewhere being more urgently required), to take suitable revenge of the previous inroad of the Scots. His proposal to deliver up Perkyn Warbeck was scornfully rejected by James, in his usual spirit of gallantry; but as he had done all or more than could have been expected in his behalf, he thought it was necessary to dismiss the pretended Prince, but in an honourable manner, by furnishing him with the means of transport from this kingdom, that he might pursue elsewhere his adventures.

This result is so clearly stated by Lord Bacon, that I cannot do better than again to quote his words (vol. vi. p. 187):—

“But the King of Scotland, though he would not formally retract his judgment of Perkin, wherein he had engaged himself so far; yet in his private opinion, upon often speech with the Englishmen and divers other advertisements, began to suspect him for a counterfeit; wherefore in a noble fashion, he called him unto him, and recounted the benefits and favours that he had done him in making him his ally, and in provoking a mighty and opulent King by an offensive war in his quarrel, for the

space of two years together; nay more, that he had refused an honourable peace, whereof he had a fair offer if he would have delivered him; and that to keep his promise with him, he had deeply offended both his nobles and people, whom he might not hold in any long discontent; and therefore required him to think of his own fortunes, and to choose out some fitter place for his exile; telling him withal that he could not say but the English had forsaken him before the Scottish; for that upon two several trials, none had declared themselves on his side; but nevertheless he would make good what he said to him at his first receiving, which was that he should not repent him for putting himself into his hands; for that he would not cast him off, but help him with shipping and means to transport him where he should desire."

Perkyn Warbeck accordingly sailed for Ireland from the West Coast in September 1497, thus terminating his connexion with Scotland. It is not necessary, therefore, to trace his further progress until the termination of his career, which took place on a gibbet at Tyburn, November 25, 1499.

Lady Katherine Gordon accompanied her husband, having adhered to Warbeck in all his reverses. In October 1497, after having landed in Cornwall, he had made a fruitless attempt to besiege Exeter; and in his flight, "King Henry sent the Lord Dawbeney with 500 horsemen after Perken to apprehend him so that many of his captaines were taken. Also divers horsemen rode to Saint Michael's mount, and there took the Lady Gordon, wife to Perken, and brought her to the king. At whose beautie and amiable countenance, the king much marvelled, and sent her to London to the queene. The common people submitted themselves to the king's mercy."<sup>1</sup> "The name of the 'White Rose,' (says Lord Bacon), which had been given to her husband's false title, was continued in common speech to her true beautie." She received a pension from Henry VII.; and various payments were afterwards made to her. She married, secondly, Sir Matthew Cradock (the ancestor of the Earls of Pembroke); and, with her second husband, was buried in the church of Swansea.<sup>2</sup>

Not long after Warbeck had left Scotland, the English King, who was inclined to peace, concluded a Treaty with this country, which led to the happy union of "the Thistle and the Rose," by the marriage of James

<sup>1</sup> Stow's Chronicle of England, p. 480. Lond. 1631. folio.

<sup>2</sup> Sir Harris Nicholas in *Excerpta Historica*.





W. & A. K. & Sherrin, Edinburgh.

FOUND ON THE HILL OF FORTRIE, NEAR ELLON, ABERDEENSHIRE.



IV. and Margaret, daughter of Henry VII., in May 1503. This indeed was followed in the course of that century by most lamentable invasions, bloodshed, and the ruinous destruction as well of religious houses as of towns and fortified places; but at length terminating in the Union of the Crowns in 1603; and, a century later, in the Union of the two Kingdoms, an event that has proved of such inestimable advantage for the welfare and prosperity of both Nations.

No genuine portrait of Warbeck is known. That of Henry the Seventh, which accompanies this paper, is an exact facsimile of the old engraving by John Payne, prefixed to the original edition of "The Historie of the Raigne of King Henry VII.," by Lord Bacon. Lond. 1622. folio.

## II.

NOTE OF A CURIOUS CARVED BONE OBJECT FOUND AT FORTRIE, ELLON, ABERDEENSHIRE. BY JOHN STUART, LL.D., SECRETARY. (PLATE XXXVI.)

This bone ornament was found in ploughing by Mr Alexander Wemyss, farmer at Drakemyre, on the estate of Fortrie, in the parish of Ellon, Aberdeenshire. There was nothing to make the spot remarkable. On the ordnance survey map of Fortrie occurs the following entry:—"Hill of Cairnton—site of cairn—stone cist and coins found here A.D. 1850." The croft of Cairnton is on the side of the hill, and is included in the farm of Drakemyre.

On the farm of Auchnavaird, which adjoins Mains of Fortrie, flint arrow-heads are very frequently found. In a peat cut on the farm of Drakemyre, a curious horn was discovered; and also the bone object figured in the accompanying plate. (See Plate XXXVI.)

## III.

RESULTS OF EXCAVATIONS AT THE BROCH OF BURRIAN, NORTH RONALDSAY, DURING THE SUMMERS OF 1870 AND 1871. BY WILLIAM TRAILL, M.D., OF WOODWICK, ESQ., CORR. MEM. S.A. SCOT.

[This paper is reserved for *Archæologia Scotica*, vol. v., now in the course of publication.]

## IV.

NOTES (ACCOMPANIED BY PLANS AND SKETCHES) REGARDING THE  
 "PICTS HOUSE" OR UNDERGROUND CHAMBER AT TEALING,  
 FORFARSHIRE. BY ANDREW JERVISE, Esq., F.S.A. Scot.

[This paper will be given in a future part of the Proceedings, with additional notes.]

## V.

NOTES ON THE EVIDENCE OF SPINNING AND WEAVING IN THE  
 BROCHS OR PICTISH TOWERS SUPPLIED BY THE STONE WHORLS  
 AND THE LONG-HANDLED "BROCH COMBS" FOUND IN THEM.  
 BY JOSEPH ANDERSON, KEEPER OF THE MUSEUM.

Among the various relics obtained from the "Brochs or Pictish Towers," none are of more constant occurrence than stone whorls and long-handled combs.

In the Museum there are seventy-seven of these whorls obtained from brochs, and thirty-six of the long-handled combs. Of the latter, four are from a kitchen-midden, one from a hut-circle, one from a Roman camp, and thirty from Pictish Towers or Brochs.



Whorl for the Spindle of the  
 Distaff of red sandstone,  
 found near Roslin. (Actual  
 size.)

The whorls, which are of all degrees of rudeness, from those that are merely chipped into shape to such finely ornamented specimens as that from Roslin (see figure), were at one time conjectured to be buttons of stone, but they were simply the "whorls" of the spindle, when spinning was done by hand with a spindle and distaff, the use of the "whorl" being to act as a fly-wheel to the twirling spindle, and by its weight to

assist in drawing out and twisting the thread, which was rolled upon the

spindle from time to time as it was made from the distaff. The latter was a staff with a notched head on which the prepared lint was wound, and from which the spinner fed the spindle as required. The distaff having the "lint" or "tow" loosely wound round its head, was struck in the girdle of the spinner and projected upwards under the left arm, so as to give freedom to both hands in the management of the thread. A distaff in the Museum measures 27 inches in length. This method of spinning is still practised among the poorer classes in many parts of the Continent, although in this country it has long been superseded by the spinning-wheel, which in its turn has also become a thing of the past, except in a few of the remoter districts of the Highlands and Islands, where the use of the earlier implements has even survived to recent times; and in the recent examples, as well as in ancient times, the whorl of the spindle is usually of stone. The specimen here figured upon its spindle, as when in use, was presented to the Museum in 1855 by Mr Thomas Bryce, West Calder, and was used for spinning by his mother. Hugh Miller states that in 1825 there was not a spinning-wheel in Gairloch, but all the women used the spindle and distaff; and Dr John Alexander Smith informs me that when in Skye in 1857, he noticed an old woman busily engaged in spinning with the distaff and spindle at the village of Ardvassar, Sleat, in the southern extremity of the island. In the old "Statistical Account of the Parish of Harris" (1794), it is mentioned that an old woman there had been so diligent with her spindle and distaff, that she had made £50 by spinning.

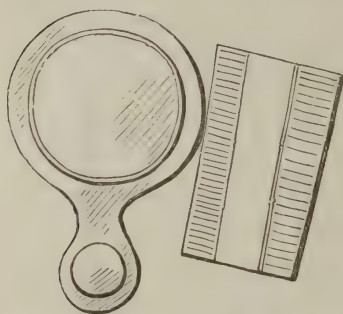
The presence of the spindle-whorls in such numbers and with such constancy in the ruins of the brochs undoubtedly implies that the females of the broch period were diligent workers with the spindle and distaff, and affords also *prima facie* evidence that they must have made cloth as well as spun yarn.

The ultimate object of the spinning being primarily the manufacture



Spindle with its  
Stone Whorl in  
position, from  
West Calder.  
(9½ in. long.)

of cloth for clothing, the next question comes to be, whether the Brochs have yielded any evidence of the existence of the art of weaving?



Mirror and Comb from the Maiden Stone, Chapel of Garioch, Aberdeenshire.

To this question my answer is, that I believe we have in the long-handled "Broch combs" a very extensive set of specimens of the characteristic implement of the early weaver's art.

It may be necessary here to meet the preliminary objection, that these long-handled combs may have been simply combs for the hair. But the common form of double-margined comb (which is associated with the mirror on the early sculptured stones as the comb of the toilet<sup>1</sup>) is usually found in company with these long-handled combs. In one case, in the Broch of Burrian, Orkney, no fewer



Long-Handled Comb from Broch of Burrian, Orkney, showing marks of wear upon its Teeth. ( $4\frac{3}{4}$  in. long.)

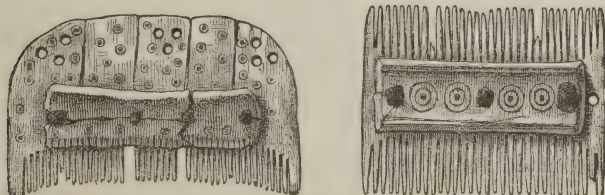
than sixteen of these double-margined combs were found, with eighteen of the long handled kind. It is difficult to suppose that the peculiar

<sup>1</sup> See the representation of such a comb on the sculptured stone from Monifieth, Plate IV.



marks of wear on the teeth of the latter could have been produced by use among the "matted locks" of the females of the period, while it is equally clear that, possessing the common form of toilet-comb in such numbers, they did not require the long-handled implement for the operation of hair-dressing, for which, it must be confessed, it is extremely unsuitable; while the peculiar marks of wear upon the teeth are exactly such as would be produced by its use as a weaver's implement, in the manner hereafter to be shown.

In the very able and excellently illustrated paper on these combs,<sup>1</sup> by Mr Millen Coughtrey, their characteristic features, and their analogies with combs for other purposes, are specially noticed, and the whole subject of their manufacture, and their special peculiarities pointing to



Combs of Bone, found with Long-Handled Combs in the  
Broch of Burrian. (Half actual size.)

their probable use, elaborately discussed. When that paper was passing through the press, I mentioned to Mr Coughtrey that I had formed a notion that these combs must have been used in weaving. He also had found some indications in that direction, but he left it undetermined whether any operation in weaving, or simple teasing of the wool preparatory to spinning, was the special purpose for which these combs were used. Since that time, in looking over some materials for my paper on the Brochs, a chance reference set me on the track which I have followed out, with the result of convincing myself that this form of comb was

<sup>1</sup> Proceedings, vol. ix. p. 118.

really the primitive *pecten textoris*, and that it probably came to the Broch-dwellers originally through the Romans.

The most striking fact in connection with the distribution of these long-handled combs is, that while they are constantly found in the Brochs, and occasionally in hut-circles in Scotland, they are usually found in England with Roman remains.<sup>1</sup> The fine specimens in the York Museum are associated with undoubted Roman relics. The Hamhill specimen in our Museum was found on the site of a Roman camp in Gloucestershire. The two specimens obtained from Kent's Cavern were found in the upper layer of the floor, associated with Samian pottery. Three found in Maiden Castle, Dorsetshire, were associated with Anglo-Saxon knives of iron, and with coins of Postumus, Helena, Julianus, and Valens.<sup>2</sup> One found at "Crawford Castle," an ancient earthwork near Spettisbury, Dorsetshire, was associated with human remains, and sword-blades, spear-heads of iron, fibulæ, and spiral finger-rings of bronze, bronze cauldrons, bone-needles, and pottery having a smooth surface and dull grey texture. The fibulæ are described as lyre-shaped, and of late Roman type; and Professor Queckett, describing two human skulls found with the remains above specified, says, "They are neither Britons nor Anglo-Saxons, but they agree in every respect with the Roman forms in the Museum." Those found in the Dowkerbottom caves at Craven, in Yorkshire, were associated with coins of Trajan and Antoninus, and with fibulæ, Samian ware, and other relics of undoubted Roman character.<sup>3</sup> That the British inhabitants of the Craven district did weave cloth is shown by the Rev. W. Greenwell having found, in a tree-coffin under a barrow, a body which had been enveloped from head to foot in a fabric of wool loosely woven.<sup>4</sup>

The specimens of this implement thus associated with Roman remains differ from the broch and hut-circle specimens only in being, as might be expected, better finished, and more elaborately ornamented. If, then, we can ascertain the fact, that such an implement as this long-handled comb was known and used among the Romans, it is most likely that the same

<sup>1</sup> See Mr Coughtrey's paper, Proc. vol. ix. pp. 124, 148.

<sup>2</sup> Journal, Arch. Ass., March 1872.

<sup>3</sup> See Geol. and Polytech. Soc. of West Riding of Yorkshire Reports for 1859 and 1864-5.

<sup>4</sup> Proc. Geol. and Polytech. Soc., West Riding of Yorkshire, for 1867, p. 18.

implement among the Piets would be used for the same purpose. It seems also to be much more probable that the form and use of the implement came northward through England in Roman times, than that it should have travelled southward to the civilised Roman province, from the region of the Brochs lying beyond the wall of Antoninus.

I now proceed to show, that precisely such an implement as this long-handled comb really was the characteristic implement of the ancient weaver's art; that it was in use among the Egyptians, the Greeks, and the Romans, as well as among the Lake dwellers of the Swiss Pfahlbauten; and that it continued in use even in mediæval times in almost every country of Europe.

Rous, in the *Archæologia Attica*, details the process of weaving among the Greeks as follows :—

“*Ξαντική*, the teasing or the carding of the wool, or *σημονπηχνη*, when they went to spinne out the *σημων* or *stamen*, and to divide it and part it from the rest of the wool; or, last of all, the weaving and joining the *σημονες* together with the help of the *κρηκίς* (the *pecten* or the sley, *like a comb*), and the *αγυυθες* or the *Λεία*, smooth stones, (like our smooth lace-sticks, that they might not weare), which hung at the end of the threads.”

Rich, in the “*Illustrated Companion to the Latin Dictionary*,” says under the word *pecten* :—

“2. *κρηκίς*, an instrument with teeth like a comb, employed by the ancient weavers for the same purpose as the reed, lay, or batten of our own time, viz., to run the threads of the web close together, by inserting its teeth between the threads of the warp, and pressing the comb up or down according to the direction in which the web was intended to be driven.”

Rich also gives a drawing of an Egyptian comb with a handle for this purpose, which was found in a tomb at Thebes, and is now in the British Museum.

In Donnegan's “*Greek Lexicon*,” under the word *κρηκίς*, the following explanation is given, “A comb, *the comb of a loom*, a hand with the fingers outspread.” The peculiar form of these long-handled combs has suggested the idea that they were made in imitation of the human hand with the fingers outstretched, which, as appears from the above quotation, was also the form of “the comb of a loom” as used among the ancient Greeks.

Again, in the same Lexicon, under the word *κερκis*, the following explanation is given :—" A weaver's comb, an instrument used for fastening (compacting?) the threads in weaving ; also the long bone of the leg and the short bone of the fore-arm."

It may be inferred, from the employment of the word *κερκis* both for the weaver's comb itself and for the long bone of the leg, either that the comb resembled a shank-bone in shape, or that such bones were used as the material from which the comb was fabricated.

Also under the word *κερκισis*, the explanation is, the art of weaving, properly of striking the threads with the *κερκis*.

In Smith's " Dictionary of Antiquities," (Lond. 1856), under the word *Tela* (a loom), there is a full description of the ancient methods of weaving in the upright loom. It consisted of two side posts connected by a cross bar at the top, under which was the beam on which the cloth was rolled as it was woven. From the beam the warp (*stamen*) hung down, and was kept hanging straight by weights (*pondera*), usually smooth stones tied to the lower end. The warp was decussated by straight wands thrust horizontally through it, the threads alternating on either side, so that by pulling forward one of these wands the warp could be passed through from side to side, either by a long rod or by a shuttle. The rest of the process is thus described :—

" After the woof had been conveyed through the warp it was driven downwards or upwards, according as the web was woven from the top or from the bottom. Two different instruments were used in this part of the process. The simplest, and probably the most ancient, was in the form of a large wooden sword (*spatha*). This instrument is still used in Iceland exactly as it was in ancient times.

" The *spatha* was, however, in a great degree superseded by the comb (*pecten*, *κερκis*), the teeth of which were inserted between the threads of the warp, and thus made by a forcible impulse to drive the threads of the woof close together. It is probable that the teeth were sometimes made of metal, and they were accommodated to the purpose intended by being curved (*pectinis unci*), as is still the case in the combs which are used in the same manner by the Hindoos.<sup>1</sup> Among us the office of the comb is executed with greater ease and effect by the reed, lay, or batten "

<sup>1</sup> See the figure of such a comb used for this purpose by the Hindoo weavers of the present day, p. 559.



Adam, in his "Roman Antiquities" (Lond. 1830), p. 485, says :—  
When the web was woven upright, a thin piece of wood, like a sword (*spatha*), seems to have been used for this purpose ; and in the weaving of Arras, of Turkey carpeting, &c., in which alone the upright mode of working is now retained, the weft is driven up *with an instrument somewhat like a hand with the fingers stretched out*, made of lead or iron.

Ovid (Met. vi. 55), gives a minute description of the process of weaving as follows :—

"Tela jugo vincta est ; stamen secernit arundo  
Inseritur medium radiis subtemen acutis,  
Quod digiti expediunt, atque *inter stamina ductum*  
*Percusso feriunt insecti pectine dentes.*"

Also (Fasti iii. 820), he says that Pallas was the inventress of weaving, and adds :—

"Illa etiam stantes radio percurrere telas  
Erudit ; et *rarum pectine denset opus.*"

Juvenal (Sat. ix. 30), makes Naevolus complain that sometimes he gets greasy and coarse clothes badly woven :—"Et male percussas textoris pectine Galli," 'and insufficiently *struck with the comb* of a Gaulish weaver ; i.e., the threads of the woof not driven closely enough together by the comb, which then served the purpose now effected by the lay.

Virgil (Æn. vii. 14) represents Circe as

"*Arguto tenuis percurrens pectine telas.*"

And in the Georgicon (lib. i.),

"Interea longum cantu solata laborem  
*Arguto conjunx percurrit pectine telas.*"

Claudian (lib. ii. 381) has,

. . . . . "doctissimus artis  
Quondam lanificae, moderator pectinis unci."

These examples may be sufficient to demonstrate the use of the comb as a weaver's implement among the ancient Greeks and Romans. That it continued in use down to mediæval times is shown by the following quotations.

Alexander Neckham in his work, "De Naturis Rerum," written in the twelfth century, and recently published in the valuable series of chronicles now being issued under the direction of the Master of the Rolls, has a chapter (cap. clxxi. De Textore) on weaving, in which, after describing the insertion of the weft, by means of the shuttle, he says :—

"Inde textrix telam stantem *percurret pectine*."

Here the description of the process used to close up the threads by the twelfth century weaver, is given in almost the same words as those used by Virgil in describing the same operation as performed by Circe. In the twelfth century, too, the weaver is a female. It may also be added that the word *percurret* exactly describes the operation necessary for closing or striking up the weft, if the instrument employed was a comb held in the weaver's hand.

In Du Cange's "Glossarium," under the word *Apidiscus*, the following is given :—

"*Apidiscus, Gloss. Sax. Aelfrici* ; *Apidiscus, Webhoc*, id est, pecten [textorius uncus].

In Minsheu's "Guide into the Tongues," (Lond. 1617), under the word *Slaie*, the following explanation is given :—

"The slaie of a weaver's loome having teeth like a combe, a Teutonic Slagen, i.e., *ferire, percutere* ; *quod feriendo conficiat pannum*, the thing that makes the web by striking [the threads together]."

He also gives the name of the implement in the following languages :—

*Belgic or Low Dutch*—Weuerkam ; id est, textoris pecten—that is, the comb of a weaver.

*Gallie or French*—Peigne de tisserand.

*Italian*—Pettine di tessitore.

*Spanish*—Payne de texedor.

*Latin*—Pecten textoris, *dentes enim habet instar pectinis*.

Also he explains "Weauer" by the Latin *Textore*, id est, *pectinis moderator*.

Under the word "Woufe of Cloth," he gives the Belgic synonym *Inslach*, ab *ein* et *schlagen* ; id est, *percutere, pectine enim dum cogitur, percutitur*.

In Lee's translation of Dr Ferdinand Keller's work on the Lake Dwell-

ings of Switzerland, there is a chapter devoted to an explanation of the simple mechanism by which the inhabitants of the Lake Dwellings might have managed to manufacture such a variety of woven fabrics as has there been discovered. But singularly enough there is no reference to the implement with which the operation of driving home the weft could have been performed—an operation absolutely essential in every description of loom. But from an examination of the remains found in these lake dwellings, we find that the spindle whorls and clay loom-weights are associated with combs of the long-handled form, made (as is often the case with the Broch combs) of flat pieces of stag's horn; one of these is figured in plate xxviii. of Keller's book.<sup>1</sup> It presents the same peculiarity of transverse markings towards the apices of the teeth which distinguish the Broch combs, and which I consider to be due to long-continued use in striking the threads of the weft in weaving. This use is indeed suggested by these combs being found as at Nussdorf along with twenty-five spindle whorls, and loom-weights in great numbers.

I add figures of corresponding clay loom-weights now in the Museum.

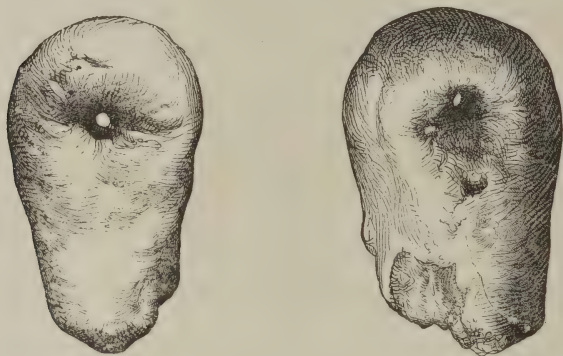


Clay Loom-weights found at Ravensby, Forfarshire.  
(4 inches in height).

They were found in the remains of an ancient structure at Ravensby in the parish of Barry, Forfarshire, and were presented to the Museum in 1871, by Mr James Neish, a Fellow of the Society. They are similar in

<sup>1</sup> See Mr Coughtrey's figure of this comb in plate xvii. of this vol., fig 6.

form to the clay loom-weight of the Swiss Lake dwellings, but considerably larger and heavier. For comparison with these the figures of two other loom-weights found at Montblairy, Banffshire, and presented to the Museum in 1858 by Alex. Morrison, Esq., of Bognie, F.S.A. Scot., are also appended.



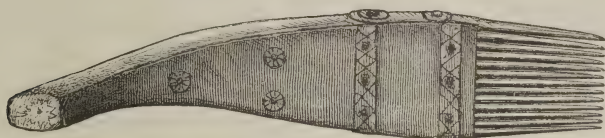
Clay Loom-weights found at Montblairy, Banffshire.  
(5½ inches in length.)

Having thus found evidence, as I thought, of the use of this implement from the earliest times, among the Egyptians, the Greeks, the Romans, and the Swiss Lake Dwellers, and indications of its continued use in different countries of Europe, and in our own country down to the twelfth century, as well as of its survival among the Hindoos and the carpet-weavers of the present day, I thought it advisable to test the correctness of my theory by an examination of the existing implements, if any of these could be obtained. Accordingly, I wrote (through Dr Arthur Mitchell) to Dr Forbes Watson of the India Museum, enclosing a sketch of one of the long-handled combs from a Broch, and asking whether, among the implements used in Indian manufacturing industry at the present day, there was anything analogous to it. In reply, I received the Hindoo weaver's comb, with which he strikes home or closes up the



weft, which I now exhibit. It is probably the form of comb referred to by Claudian when he terms the weaver “moderator pectinis unci.”

This implement, though made of wood, and having its teeth of iron, is of the same hand-like form as the long-handled Broch combs, and it is used at this day for the purpose for which I suppose the Broch combs to have been used in their day. Unfortunately, its teeth are of iron, or we might have compared the actual marks resulting from the striking of the threads by this implement with those on the Broch combs which I suppose



Comb with iron teeth used by Hindoo weavers for striking home the weft.  
From the Indian Museum (13 inches long).

to have been so produced. But even on these iron teeth, a close examination may detect slight indications of such transverse markings, and in the iron comb, as in those of bone, it is the apices and not the bases of the teeth that are so marked.

Dr John Alex. Smith also applied for me to Mr Whytock, carpet manufacturer, George Street, a Fellow of the Society, for information concerning the old methods of carpet-weaving in this country, and received the following reply:—

*“Edinburgh, 24th April 1872.*

“Dear Sir,—We have the pleasure to send you a portion of a sley, such as was used in the old Brussels carpet hand-loom.

“But in the manufacture of the Persian or Axminster carpet, made in one piece and worked in an upright loom, the instrument used for beating down the weft or pile was about four inches broad, with teeth resembling those of a horse-comb, fastened into a short handle, used with both hands by the worker.

“Agreeably to your request, we have also written to our successors at Lasswade, where the manufacture of the Scoto-Persian (or Axminster)

carpets was carried on formerly by our firm, asking them if they can find one of the old-fashioned heavy combs that were used in beating down the weft in those vertical webs.

"The shape of those combs, as nearly as we can remember, was something like the rough sketch annexed, the teeth being of iron, and the head of the comb was weighted with lead. [The sketch showed a toothed implement in shape somewhat like the short flat hand-brush used by painters in whitewashing, or indeed a good deal like the Indian loom comb (previously figured), only a little broader in proportion to its length]. The velvet tufts were knotted on the warp by boys; and as the carpet was woven all in one piece, the shuttle was shot and re-shot through the sheds of the warp by means of a cross-bow.

"You may be aware that Sir J. G. Wilkinson in his 'Ancient Egyptians,' gives a woodcut of a comb which he supposed to have been used in splitting the fibres of flax. We are quite of opinion, however, that the teeth of the comb are not fine enough for such a purpose; and that it must have been intended to supersede the primitive wooden sword anciently employed for beating in the weft."

The inquiries made at the works at Lasswade and Roslin, for a possibly surviving specimen of this old-fashioned implement were unfortunately unsuccessful, the last noticed having been lost in 1868.

Along with the long-handled combs found in the Broch of Burrian, seventeen in number, there were found seven implements made of flat slabs of bone, with rubbed and rounded edges polished by use, similar to that figured below, some of which were at first supposed to be hatchets. The edge, however, is a rubbing and not a cutting edge, and I have no doubt they are the "rubbing-bone" so well known to the Irish hand-loom weaver, used for smoothing down the web as it is woven.

In consideration of all these facts, I find it impossible to avoid the conclusion that the long-handled comb of the hut circles and the Brochs of Scotland is the *Pecten textoris*, and I am strongly inclined to believe that it may have come to the northern districts of Scotland through contact with Roman industrial art. It is certainly suggestive of this, that while these combs are constantly found associated with remains of the Roman or Romano-British period in England, there is not a single specimen of such a comb in Ireland, where the Roman influence seems to

have been scarcely felt. This does not imply that the Irish were not weavers, but simply that they did their weaving differently—using the *spatha* instead of the comb. The *spatha* was also (till quite recently) the implement of the Scandinavian loom, and it may be remarked that the Romans had little or no direct influence on early Scandinavian arts



Rubbing bone made of the bone of a whale, found in the Broch of Burrian, Orkney.  
( $6\frac{1}{2}$  inches by  $3\frac{1}{4}$  inches.)

and industry. We find the comb or traces of its use in all the countries of Europe to which the Roman influence extended; but we do not find it in those countries where the Roman influence was never felt.

[Dr Bruce A. Bremner, a Fellow of the Society, said that his friend Dr Malcolm Monro Mackenzie, Civil Surgeon, Dharwar, Bombay, who was present, might be able to tell the meeting something regarding the use of the Indian implement.

Dr Mackenzie stated that he thought it somewhat curious to find a learned society speculating as to the probable use of an implement with which he was so very familiar. In all the jails in his district in Bombay, the work of the convicts was chiefly weaving, and the implement that was universally used for beating in the weft was a hand-comb, generally of wood with iron teeth, like the one now exhibited. Looking at the form of the ancient combs of bone from the "Pictish Towers" and the marks upon their teeth, he had no doubt they were the same implement.]

## VI.

NOTICES OF MAJOR-GENERAL WILLIAM ROY, FROM THE PARISH REGISTERS OF CARLUKE AND OTHER SOURCES. BY D. R. RANKEN, ESQ., CARLUKE.

Every earnest student must have experienced the desire to know more of the personal history and labours of General Roy<sup>1</sup> than any of the biographical notices of him supply. In the "Lives of Eminent Scotsmen," published in 1835, a short notice of him will be found in an appendix—a notice which does not even fix the place of his nativity. In the account of the parish of Carluke, by the Rev. Dr James Scott, written in 1792, for Sir John Sinclair's "Statistical Account," it is stated that General Roy was a native of the parish; and the Rev. Stephen Bell of Eyemouth, who, in 1839, wrote the article "Carluke" for the "New Statistical Account of Scotland," mentions the place and date of birth. The register of baptisms of Carluke, under the year 1726, has the following entry: "Wm. S. to John Roy, was born, May 4. Baptized, May 12. Capt. Walter Lockhart, and Gavin Muir, witnesses." General Roy was therefore a Lanarkshire man. His father lived at Milton-head, in Carluke parish, and was gardener as well as land-steward or factor in the service of the Hamiltons of Hallcraig; and, as such, his name occurs frequently in the sederunt of heritors, as acting for Sir William Gordon, and his son Mr Charles Hamilton Gordon of Hallcraig and Milton, from 1739 onwards. He was appointed on several occasions to transact business for the heritors. For example, in 1742, he was chosen "to sell the kirk clock and case;" in 1746, he was appointed "to receive estimates for repairing the bridge near the Manse;" in 1747, he was requested to "sell as many trees growing round the minister's yard" as would make up a certain sum, &c., &c. He was ordained an elder of the kirk 3d July 1737, and died towards the end of 1748, aged 51. John Roy, the General's grandfather, held a similar position under the Hamiltons of Hallcraig; and his uncle, James Roy, acted in somewhat the same

<sup>1</sup> See Notices of General Roy and his family, by D. R. Rankin, Esq., Carluke, in vol. i. of the Proceedings, p. 145.



capacity under the Lockharts of Lee. The first time the name of the elder John Roy occurs in any of the parochial registers is in the Poll-tax list for 1695, two years before the birth of the General's father, namely, 15th April 1697. The entry in the Poll-tax list is as follows:—"Jo. roy serviter to My Lord halleraig—00.19.04."

William (General Roy) and his brother James were educated at the school of their native parish under Mr John Russell, the former partly at the grammar school of Lanark, and it is uncertain whether he had the benefit of any higher scholastic training; but it is well known that James, his younger brother, held the bursary in the grammar school and college of Glasgow, founded in 1737 by the Countess of Forfar, from 1738 till 1751, and, after finishing his studies, he held in 1756 an appointment at Shettleston Chapel of Ease; acted as assistant to the ministers of St Cuthbert's, Edinburgh, for several years; and ultimately was presented to the parish of Prestonpans in 1765, where he lived scarcely two years, his death occurring on the 3d of September 1767, at the age of 37.

During the military operations of 1745-6 to suppress the rebellion, headed by Prince Charles Stuart, from experience gained in conducting his forces, the fact was forced upon the Duke of Cumberland that by the opening up of the country by good roads, and by a proper knowledge of its topographical features, military operations could be made more effective and certain. Soon after the Prince's rout at Culloden, a survey of Scotland was accordingly resolved upon. Roy was early engaged in that important work in a subordinate position, for his name does not occur in the Army List for many years after that time. In 1747 Roy acted in the capacity of Deputy Quarter-Master in the survey corps—a post which he may have held during the greater part of eight years before the survey was interrupted by the urgent need of forces for the protection of the patrimonial possessions of his Majesty in Germany, in which service he was called to take an active part, a movement ultimately involving Britain in war with France, which extended to North America and to India.

This may be a fit place to record the military progress of the future General. The first time that the name of William Roy appears in the Army List is in March 1757; and the following statement, compiled from successive army lists, comprehends almost all that is known on the subject:—

1757. March.—Practitioner of Engineers (at 3s. per day).  
1757. May 14 —Practitioner of Engineers, as Ensign of the corps,  
with rank in the army as Lieutenant from 4th  
January 1756.  
1759. March 17.—Sub-Engineer—Lieutenant of Engineers.  
1759. September 10.—Engineer in Ordinary—Captain of Engineers.  
1762. July 23.—Engineer in Ordinary—Lieut.-Col. in the Army.  
1763. January—Deputy Quarter-Master in Germany.  
1764–6.—Lieut.-Col. in the Army—Captain of Engineers.  
1767–90.—Deputy Quarter-Master General.  
1777. August 29.—Colonel in the Army—Captain of Engineers.  
1778. May 30.—Commissary-General of Stores, provision and forage  
to all the forces at home and abroad.  
1781. October 19.—Major-General in the Army—Capt. of Engineers.  
1783. January 1.—Lieut.-Col. of Engineers—Major-Gen. in the Army.  
1785. September 19.—Col. of Engineers—Major-Gen. in the Army.  
1786. November 15.—Colonel of 30th Foot—(name removed from  
Engineer's lists).  
1790.—In the Army List of this year, General Roy's name appears  
for the last time 17th on the list of Major-  
Generals.

In the obituary notices of the time, in the "Gentleman's Magazine" and in the "Scots Magazine," he is represented as holding the position of Colonel of Artillery in charge of the survey of Scotland in 1746, when only twenty years of age, and held no place in the Army List till ten years later, an error carried forward by Watt's "Bibliotheca," the "Annual Register," the "Lives of Eminent Scotsmen," &c., to the "Scottish Nation" of yesterday. During the survey it is well known that he acted under Lieut.-Colonel David Watson in quite a subordinate position.

Of the services of General Roy in the field, in that momentous period comprehending the later years of the reign of George II. and early part of the reign of George III., nothing is known beyond the result of frequent engagements in Germany in combination with the Prussian army. But his scientific career can be more fully traced. With the peace of 1763, the Government had under consideration the scheme of a general survey of

the British Islands, to be under the direction of General (then Colonel) Roy, but nothing was done in twelve years of peace, and the American war put an end for the time to the project. The General was in Scotland in 1764 taking plans of Roman works, and collecting material for his "Military Antiquities of the Romans in Britain"—a work of great merit, published three years after his death by the Antiquarian Society of London, of which he was a member. The survey of Scotland on which Roy had been long engaged with a corps of Engineers resulted in a work known as the Duke of Cumberland's map, executed on a scale which afforded scope for minute details. This map, in manuscript, is preserved in the Ordnance Office, and although admitted to be imperfect in some respects, it certainly was a matchless production for its time. In 1774, under the title "*Mappa Britanniae*," &c., Roy produced this map on a reduced scale, on a single sheet 18 by 23½ inches, a map which again appeared in the valuable posthumous work above referred to.<sup>1</sup>

General Roy was elected a member of the Royal Society 26th March, and admitted 9th April 1767. For this Society he prepared and read a succession of interesting and most valuable communications, extending over the last twelve years of his life, all of which not only appeared in the Philosophical Transactions, but were published in a separate form. The first of these was a highly interesting paper read in 1777—"On experiments and observations made in Britain in order to attain a rule for the measuring of heights with the barometer." Halley, Deluc, and Sir George Shuckburgh had previously investigated the subject, the last with great accuracy; but the formulas for the measurement of heights by this method, carefully tested by the old and tedious mode of levelling, are due to the labours of General Roy.

In advance of any public measure, the General was in 1783 found at work, as a labour of love, projecting a base line for an extended triangulation, in order to fix certain conspicuous local points in relation to each

<sup>1</sup> It may be worthy of notice that during his investigations in reference to the various atmospheric influences on the barometer, General Roy not only made experiments on the expansion of mercury—of the glass tubes containing it, and of air when heated; but also on the *expansion of air and vapour of water in various proportions*, and through a considerable range of temperature and pressure—experiments, the first on record, which indicated the now well-known law, subsequently propounded by Dalton, regarding mixtures of vapours and gases.

other. This paved the way for more extended operations soon after entered upon, resulting in an account of minute details in the well-known paper read before the Royal Society, for which the Capley medal for 1787 was awarded; a paper followed in 1790, by "An Account of Trigonometrical Operations, whereby the distance between the meridians of the Royal Observatories of Greenwich and Paris can be determined," the printing of which the General was engaged in superintending for the Philosophical Transactions at the time of his death. In conducting these observations great difficulty was experienced from want of appropriate instruments, which, in some degree, was obviated by the generosity of George III., who provided funds and took a deep interest in the experiments. The standard of length used in these experiments, it is believed, is still preserved in the Royal Observatory. The general survey of the British Islands, contemplated in 1763, was not finally entered upon till 1791, when Roy was no more, and has ever since been extended towards completion.

The death of General Roy was sudden. It is said that the night on which he died he was transacting business at the War Office till 8 o'clock. He died at his house in Argyll street, after two hours' illness, on the 30th June 1790, having just entered his 65th year. At his death he was Colonel of the 30th Foot, and held the offices of Deputy Quarter-Master of his Majesty's forces, surveyor of the coasts and batteries, was a Fellow of the Royal Society and of the Society of Antiquaries, London.

## VII.

DESCRIPTIVE CATALOGUE OF THE ROMAN CONSULAR AND FAMILY COINS (DENARII) IN THE CABINETS OF THE MUSEUM OF THE SOCIETY. BY GEORGE SIM, Esq., F.S.A. SCOT., CURATOR OF COINS.

[This paper is reserved for the "Archæologia Scotica," vol. v., now in course of publication.]



## VIII.

NOTE ON A BRONZE PATELLA, HAVING AN ANGLO-SAXON INSCRIPTION  
ON THE HANDLE, FOUND AT FRIAR'S CARSE, DUMFRIESSHIRE.  
By RALPH CARR, OF HEDGELY, ESQ., F.S.A. SCOT.

In the "Archæologia," vol. x., will be found an engraving of a culinary utensil of Roman form—neither more nor less than a saucepan. It was found many years ago at Friar's Carse in Dumfriesshire, and therefore the judgment of Scottish Antiquaries is concerned that it should be more fully published than in the meagre notice published with the engraving in the "Archæologia."

Above all, I wish to direct attention to the inscribed handle, on which is a word which has been taken for the name of the fabricator.

Any one accustomed to the study of Teutonic languages (such as the early and the modern German, the Anglo-Saxon), will perceive that the word in question is Teutonic, and, in fact, Scots Saxon or Northumbrian Anglo-Saxon, and is not a name, but significant of the owner's business or calling—that of a *cook* or *head-cook*.

Roman capitals were used by the Anglo-Saxons on their coins, and were especially in favour with ecclesiastics. There is nothing against the Saxonism of this label from its Roman capitals. Nevertheless it has one Saxon character which has been misread as P, but which is P, th.

The word is ANSIEPHARR. *Siethan* or *seothan* is to seethe or boil, in German *sieden*. *Ansiethan* is to boil on or continuously. *Harr*, or *harra*, Germ. *Herr*, is a master or head-man. The whole word means head-cook or master-cook. Nor can we escape the inference that the label is Saxon, though the pan may be Roman, by insisting that the P is P and not th. That won't help us. The word *siep* or *ansiep* is equally Saxon, being no other than the root of to *sip*, to *sipe* or soak, and of the noun *sip* and *sipper*, all most orthodox culinary vocables.

If the letter was really P, which it is not, the word would mean chief bread-soaker and porridge-helper. Boiled bread and milk is still a popular food.

There is no way out of this being a Saxon label.

Roman forms of culinary utensils are common to this day in the south of France and in Italy. Was this pan made in the south of Europe, and imported, or was it ancient Roman? In either case it was labelled by the Saxons in North Briton, and probably used in a convent kitchen. To suppose that the label was there in Roman times, which seems to be the idea of Mr Albert Way, whose attention I directed to it, would only add hopeless difficulty to the problem.

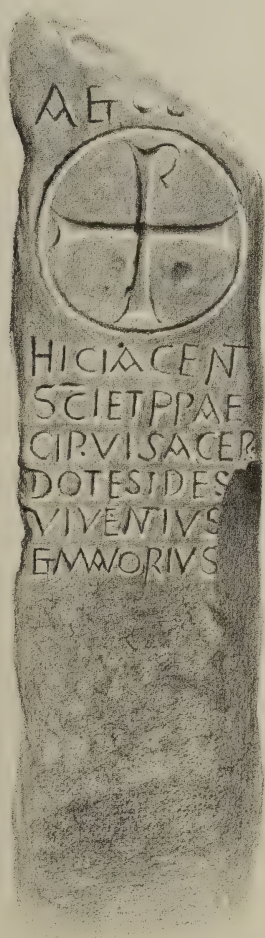
Any one can see that the word is neither Roman, nor of any known barbaric tongue of Roman times, except Teutonic. But a German cook in Roman employ, writing his calling *in German* upon a saucepan, would be a discovery enough to stir the curiosity of every professor beyond the Rhine. This is the most extravagant hypothesis of all, and I can hardly conceive it to have been implied, though it would necessarily follow if Mr Way's opinion were adopted that the label as well as the utensil is Roman.

## IX.

INSCRIBED STONES AT KIRKMADRINE, IN THE PARISH OF STONEY-KIRK, COUNTY OF WIGTON. BY ARTHUR MITCHELL, M.D., COMMISSIONER IN LUNACY, V.P.S.A. SCOT., ETC. (PLATES XXXIX. AND XL.)

Some years ago, while in the parish of Stoneykirk, I found myself in the neighbourhood of the old burial-ground of Kirkmadrine, and having an interest in old things, I embraced the opportunity of paying it a visit. When climbing over the gate, I observed that there was a figure and an inscription on the stone pillar on which it was hung. The figure I recognised as one which I had seen in the Catacombs at Rome, and the inscription, which was easily read, appeared to me of remarkable interest. I knew enough of our sculptured stones to be immediately aware that I had fallen on something which had no counterpart anywhere else in Scotland, and the existence of which was unknown to those who had given attention to such subjects.

On turning round after completing a careful examination of this pillar, I found that the other pillar, to which the gate fell, had a similar figure on it, and also what appeared to be a continuation of the inscription.



1



3



4



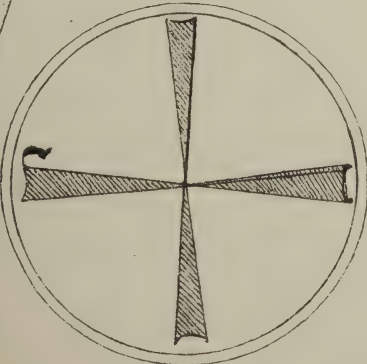
2





The three following figures are faithful representations of three stones with inscriptions on them (as above) as they stand in the place.

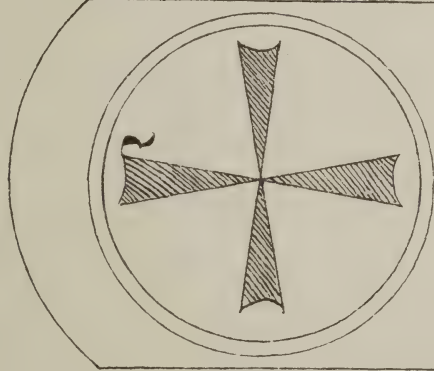
A B C



HIC IACENT  
SCIENTIPPAE  
CIRVISACER  
DOTESIDES  
VIVENTIVS  
FMAVORIS

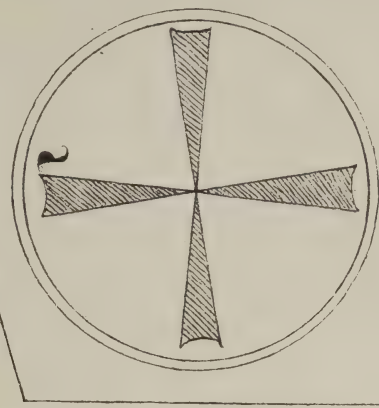
This burial ground at Kirkmadrine Parish of  
Stonewick and Estate of Andrewell.

3.



IVITIVR  
FKAVIS

2.



SE  
KKOREN  
TIVS



I made rough sketches of both pillars, and transmitted them to Sir James Simpson, who, after consultation with Dr Stuart, went to the expense of sending Mr Henry Laing to make plaster casts of them, and these are now in the Museum.

After finding these two pillars, I searched for other objects of interest, but discovered nothing except a broken sculptured slab, which served as a stepping-stone over a dyke by the side of the road leading up to the burial-ground. It is roughly represented in fig. 4, Plate XXXIX.

I also called on some of the small farmers, who lived near Kirkmadrine, to ascertain if they had ever heard of other sculptured or inscribed stones having existed in the burial-ground. I learned little from them, except that there had once been a third stone not unlike the two I found, and that it had been taken away to make a lintel to some farm building, the situation of which, however, no one was able to indicate.

Next year I had again occasion to be in Stoneykirk, and I took the opportunity of carefully examining the buildings of the neighbouring farmsteads; and, remembering that I had found the so-called rein-deer stone as the cope of a pig-stye, I thought no building too mean for examination. My search, however, was in vain; but it was on this occasion, I think, that I found a fragment of a sculptured stone which had been turned up in the graveyard itself, and which is now built into the wall. The rough sketch I made of this stone is given in fig. 1, p. 570. It is probably sufficiently accurate to indicate the character of the sculpture.

I then inquired whether there was no old person in the parish who had shown an affection for the relics of a bygone time, but I heard of no one. Mention, however, was often made of Mr William Todd, an old schoolmaster in the neighbouring parish of Kirkmaiden, who had been a correspondent of the late Mr M'Diarmid of the *Dumfries Courier*, and who was then living on his pension in Drumore. Next morning I had an opportunity of calling on him, and I asked if he had ever seen, and if he remembered anything of the *two* stones at Kirkmadrine. "There are *three*," he at once said, "I have often seen them and remember them well." I assured him that there were only two now, but told him I had heard from others of a third. After some reflection, he assured me that what I had been told was correct; that he had once—about 50 years ago—made a drawing of them, and that it was possible he had the

drawing still in his possession. An old desk was sent for, and among the papers it contained there was one folded like a letter, brown and stained with age, and on this we found the drawings of the three stones, which are exactly copied in figs. 1, 2, and 3 of Plate XL. Fig. 3 represents the missing stone, which, like the others, has the well-known monogram (✚) enclosed in a circle, and below it the words INITIUM ET FINIS.



Fig. 1. Sculptured stone built into the wall of the Graveyard at Kirkmadrine.

These drawings are rude, but we may fairly infer the substantial accuracy of the sketch of the third and *lost* stone from the accuracy of the sketches of the other two, which we can still compare with the originals, as carefully depicted in figs. 1 and 2 of Plate XXXIX. The only mistake Mr Todd appears to have made is in substituting an R for an M at the end of INITIUM. I assume this to be an error in his drawing.



The writing on the three stones, when put together, forms a continuous narrative, beginning with *a* ET *ω* and ending with INITIUM ET FINIS. It runs thus:—

A ET Ω  
HIC JACENT  
SCĪ ET PRÆ  
CIPUI SACER  
DOTES ID EST  
VIVENTIUS  
ET MAVORIUS  
..... S ET  
FLOREN  
TIUS  
INITIUM  
ET FINIS

I have given at the top of Plate XXXIX. the exact words which are written by Mr Todd over his drawings, and I now subjoin some notes which are also written by him on the same sheet of paper, and which, though they do not manifestly relate to the Kirkmadrine stones, may possibly prove of value in connection with them, as they refer to antiquities in the same or in the adjoining parishes.

“*Kilachie*, a field on the farm of Cregach, near Portpatrick, supposed to be an old burying-ground, from the stones that are standing in it, some of which appear to have had letters upon them, but time has defaced them; some of these stones were taken from this place for building in the year 1818. The workmen came to a cave” (*cist*) “covered with flat stones, which they lifted, and found in it a skull and thigh bones of a human person of more than ordinary size; there was also a cup” (*urn*) “beside the skull, with a little water in it. The late Mr Blair of Dunskey got the cup from the workmen.

“*Clendrie*, a farm in the parish of Inch. There was a round mound of stones, commonly called a cairn, on this farm, and as some people were removing the stones for building in the year 1818, they came to a place

in it formed like a *chist* with large flat stones, which they raised, and found in it a human skull and a Roman urn, with some ashes in it. The Rev. James Ferguson, who was present, got the urn from the workmen, and the late Earl of Stair got it from him."

*"Names of Farms, Hills, Fields, &c.*

Altiery, a farm, Mochrum.

Kilantringan, a farm, Portpatrick.

Craigolive, a hill near Craiglive House, Portpatrick.

Milgarva, a hill, Portaspittle, S. Kirk.

Craignicore, a hill, Mark, Leswalt.

Barraylawy, do. do. do.

Ballohcappery, do. do.

Tachraggan Knocknain, do.

Tarmassack do. do.

Altiehip, a field, Macherwhatt, Colmonell."

*"Balmennoch*, formerly a farm in the parish of Inch, but about the year 1792 this farm was divided, and part of it now forms part of the farm of Meikle Lochans, and the other part is that which is now called Mount Pleasant. There were on this farm six large stones standing in a circular form, commonly called the standing stones of Balmennoch. But between the years 1760 and 1770, the Rev. Mr Douglas, at that time Seceder minister in Stranraer, rented the farm of Little Lochans, and being in need of stones for building, sent some workmen to take down these stones, and as they were employed in taking down these monuments of antiquity, a little old man came to them and told them not to meddle with these stones, and likewise he told them that the person that was building the house would never enjoy it. They paid no attention to what he said, but went on with their work, and the old man left them as he came, they not knowing when he came or when he went, but Mr Douglas died before the house was finished."

I have been minute in telling the history of my search after the lost stone, and of the discovery it led to, in order that the value of the sketch

of it, which we now possess, may be clearly understood. The two stones at Kirkmadrine are probably the oldest written records of Christianity which exist in Scotland, and as I had the good fortune to be the first to bring them into notice, I am desirous that our knowledge of the third should be regarded as satisfactory.

In order to show that I do not overrate the interest which antiquaries and ecclesiologists attach to these monuments, I need only quote what Dean Stanley says of them in his "Lectures on the History of the Church in Scotland," London, 1872, p. 25. "Nowhere in Great Britain," he writes, "is there a Christian record so ancient as the grey weather-beaten column which now serves as the gate-post of the deserted churchyard of Kirkmadrine, on the bleak hill in the centre of the Rinns of Galloway, and bearing on its battered surface in letters of the fourth century the statement that it had marked the graves of three saints of Gallic name, Florentius, Vincentius, and Mavorius. Few, very few, have been the travellers that have reached that secluded monument; long may it stand as the first authentic trace of Christian civilisation in this island." The beauty of this allusion makes it easy to overlook its many inaccuracies. Yet when I first read it, and remembered my diligent search for the missing third stone, it was with a feeling of pain that I found the Dean speaking of the two well-known stones as one "grey, weather-beaten column," begetting a fear that another lintel had been needed in the neighbourhood,—a fear which was only relieved by observing that on his single column the inscriptions of both stones occurred.

The Kirkmadrine stones are the first given in Mr Haddan's "List of Sepulchral Christian Inscribed Stones and other Monuments in Scottish and English Cumbria, A.D. 450-900." As his notice of them is brief, I give it in full:—

"*Fifth century.*—At Kirkmadrine, west side of the Bay of Luce, county Wigton; three stones in the old churchyard:—

"*a.* On one beneath the monogram (✠) enclosed in a circle (which is also on the other face of the stone),

HIC JACENT SCI ET PRAECIPUI SACERDOTES ID EST  
VIVENTIUS ET MAVORIUS.

"And above the monogram A ET Ω.

"*b.* On the second (which has a like monogram within a circle), partly obliterated,

. . . . . S ET FLORENTIUS.

"*c.* The third has tracery, but no inscription.

"The character of the letters and ornaments carries these inscriptions back to a still Romanised time, and also bears a resemblance to Gaulish monuments of the kind. They are probably of the fifth century, and belong to priests connected with St Ninian himself, and through him with north-west Gaul. The Roman character of the names also tallies with this."<sup>1</sup>

By far the best and fullest account of these monuments, however, which has yet appeared, or which is likely soon to appear, is that by John Stuart, LL.D., in the second volume of "The Sculptured Stones of Scotland" (Notices of the plates, p. 35). With his permission it is reproduced here. The figures referred to in it are 1, 2, 3, and 4 of Plate XXXIX., which have been lithographed from new drawings. When Dr Stuart wrote his learned notice, the sculptured fragment, fig. 1, page 570, had not been discovered, and the existence of the three sketches by Mr Todd, including the missing third stone (Plate XL. figs. 1, 2, and 3), was unknown. These fresh discoveries add interest to his notice, but they lead to no modification of anything he has said.

"The parish of Stoneykirk, lying on the west side of the bay of Luce, comprehends the three old parishes of Stoneykirk, Clachshant, and Torkerton or Kirkmadrine. The ruins of an old church remain on the farm of Clayshank, and the churchyard of Kirkmadrine is still preserved as a burial-ground. This suppressed parish is called Kirkmadin by Chalmers, under the belief that it was dedicated to St Medan, and that 'Madrine' is merely a corrupt form of the saint's name."<sup>2</sup>

"Another suppressed parish of Kirkmadrine, now included in the parish of Sorbie, is supposed by Chalmers in the same way to have been a dedication to St Medan."<sup>3</sup>

"There seems, however, to be no sufficient foundation for this assump-

<sup>1</sup> Councils and Eccles. Documents. Edited by A. W. Haddan, B.D., and William Stubbs, M.A. Oxford, 1873, p. 51.

<sup>2</sup> Caledonia, vol. iii. p. 439.

<sup>3</sup> Ibid., p. 429.



tion. In the year 1567 we find among the parishes of Galloway one called 'Kirkmadryne,' although it does not appear which of the above parishes is referred to.<sup>1</sup>

"In Bleau's Atlas the first of the above churches occurs under the form of Kirk Makdrym, and the second as Kirk Mackdry. Symson calls the last church 'Kirkmadroyn.'<sup>2</sup>

"In the recent map of the Ordnance Survey both churches are given under the name of 'Kirkmadrine.'

"There are two neighbouring churches dedicated to St Medan, one of which is now included in the parish of Glasserton, and is known as 'Kirkmaiden in Fernes;' the other is the parish of 'Kirkmaiden in Rinns.' In the Register of Ministers just quoted these parishes are entered as 'Kirkmaden in Fairness,' and 'Kirk Madin in Rynnis,' while in Bleau, the former is set down as 'Kirk Maiden on the Sea,' and the latter as 'Kirk Madin.'

"Chalmers, on the assumption that the parish of Kirkmadrine, now united to Sorbie, is really Kirkmaiden, supposes that an entry in the treasurer's accounts of an offering of 18s. made by King James IV. 'in Sanct Medan's Kirk' in August 1506, applies to this Kirkmaiden; but for this he has no authority.

"Of the stones figured on this plate,<sup>3</sup> No. 1 is a hard, rounded block of whinstone. The letters of the inscription are distinctly cut. The monogram, with enclosing circle, is cut in broad shallow lines on both faces of the stone.

"No. 3 is a stone of exactly similar character, but much more worn and destroyed, and the letters of the inscription are cut in a ruder and more irregular manner. These monuments were brought into notice a few years ago by Dr Arthur Mitchell, and casts of them have been presented to the National Museum of the Antiquaries of Scotland by Professor J. Y. Simpson. They are of a character entirely different from any others in Scotland, and have a good deal in common with many of the sepulchral inscriptions in 'Inscriptions Chretiennes de la Gaule anterieures aux viii<sup>e</sup> siècle.'<sup>4</sup>

<sup>1</sup> Register of Ministers, p. 50, Mait. Club. Edin., 1830.

<sup>2</sup> Description of Galloway, p. 44. Edin., 1823.

<sup>3</sup> Plate LXXI. of Dr Stuart's work.

<sup>4</sup> Par Edmond le Blant. Paris, 1856.

"The first slab has on both faces a monogram of the name of Christ formed of the Greek letters X and P within a circle. In one of the circles<sup>1</sup> are the Greek letters Alpha and Omega (Α ET Ω), the last letter being nearly effaced. Here the X is made upright, and in this shape 'it is almost equally common with that borne upon the *labarum* of Constantine on which the X is of the usual form. It is also of equal antiquity with it, instances of its use occurring both on the wall paintings and inscriptions of the Catacombs of Rome, and upon the small lamps found in the graves of the early Christians.' It occurs in both forms, and without a circle, on many of the early monuments of Gaul figured in the work of Blant. It is found on many coins of the early Christians, and it was the subject of delineation throughout the Roma-Byzantine period. It is prefixed to many of our early charters, and it occurs on the inscribed stone at Jarrow recording the dedication of the church of St Paul there in the year 685.<sup>2</sup>

"A very remarkable instance is recorded by Mr Westwood of its occurrence on one of the early inscribed stones of Wales, on which is the inscription, CARAVSIVS HIC JACIT IN HOC CONGERIES LAPIDUM, from which it is plain that the pillar had been set on a cairn. Above the inscription is the *labarum* without the circle. This is the only known instance of its use on a stone monument in Wales, and Mr Westwood regards its occurrence as an evidence of the great antiquity of the inscription.<sup>3</sup> It has not been found on any other Scotch monument.

"The inscription on the first stone reads, HIC IACENT SĪ ET PRÆCIPUI SACERDOTES ID EST VIVENTIVS ET MAVORIVS. That on the second pillar is partly obliterated. What remains reads—S ET FLORENTIVS. The style of such letters as R, M, and F has much in common with that of the early inscribed stones in Wales, which have been called Romano-British, as it resembles them also in the occasional combination of two letters, when the limb of one is made to form part of the next.<sup>4</sup>

"The frequent occurrence of the *labarum* on the monuments of Gaul,

<sup>1</sup> By mistake for—Above one of the circles.

<sup>2</sup> Mr Westwood in Arch. Cambr., July 1863, pp. 255, 256. Kemble's Codex Diplom. Anglo-Saxon, vol. i. p. 145, &c. Mabillon de Re Diplom. pp. 67, 85, 161.

<sup>3</sup> Arch. Cambrensis, July 1863, pp. 215, 256.

<sup>4</sup> Arch. Cambrensis, *passim*.

and in the Catacombs, suggests that its exceptional occurrence in Scotland may have arisen from foreign influence. It will be borne in mind that Ninian, the first Christian missionary to Northern Britain, erected his church of stone at Whithorn, a spot not many miles distant from the site of the monuments in question. We know that Ninian, after his consecration at Rome, was desirous of seeing St Martin, the great luminary of Western Christendom, and accordingly visited that saint at Tours on his homeward route from Rome to Britain. His establishment at Whithorn included a monastery as well as a church, and was probably framed on the model of that which he had seen at Tours. The youth of the country were sent to Whithorn for their education, and the institution of St Ninian continued to be famous as one of the chief ecclesiastical schools of Britain. If we may trust the life of St Ninian, written in the twelfth century by Ailred of Rievaulx, but professing to be founded on an ancient book of his life and miracles which was '*barbario scriptus*,' the saint brought with him from Tours masons who could build for him a church of stone in a country where stone churches were unknown.

"If we should suppose that through the connection between him and St Martin some of the brethren of Tours were induced to cast in their lot with Ninian in his attempt to establish the Christian religion among his pagan countrymen, and that they founded a church dedicated to Mathurin, another great saint of Gaul, and contemporary with St Martin, who predeceased him by about ten years, we might more readily account for the occurrence of these peculiar monuments, and of the two Scotch dedications to the Gaulish saint in the neighbourhood of Whithorn. It would likewise account for such classical names as Viventius, Mavorius, and Florentius, which are not uncommon in early lists of continental names. The feast of St Mathurin was celebrated on the 9th of November, and, according to a local account furnished to Professor Simpson, a fair at Kirkmadrine was formerly held on the 22d of November, or on the Tuesday after it.

"The pillars, when observed by Dr Mitchell, were used as gate-posts in the walls of the burying-ground. There is reason to believe that one or more similar pillars have been removed and used for building purposes.

The fragment (No. 2) was found by Mr Gibb as a stepping-stone in a neighbouring dyke.

"An account of the parish, written about twenty-five years ago, probably refers to these stones in the following notice :—' Kirkmadrine, with its churchyard, still preserved as a burying-place, contains some grave-stones with antique inscriptions.' (*New Stat. Ac., Wigton.*, p. 164.)

"The letters of these inscriptions remind us of the style of those on



Fig. 2. Inscribed Stone near Whithorn.

Roman altars and tablets. Some of them are of the same form as those on the curious stone at Yarrow, represented in the Proceedings of the Society of Antiquaries of Scotland (vol. iv. p. 524), and the monuments are probably to be regarded as among the earliest Christian records now remaining in Britain.

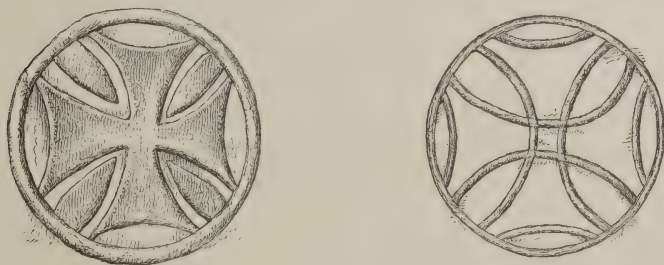
"On the lands of Ardwell, in the parish of Kirkmadrine, are some remains of stone circles and 'Pictish Castles.' Two gold 'lachrymatories,'



weighing three and a half ounces each, were found on the lands of Garthland in Stoneykirk in 1783.<sup>1</sup>

The only other case in which our Saviour's monogram (✠) is found on an inscribed stone in Scotland occurs also in this county, and I had the good fortune to bring this stone also under the notice of antiquaries. It is situated near Whithorn, at the side of the road leading to the Isle, close to the farm of Enoch, and has very much the look of a milestone, standing about three feet out of the ground. The sketch (fig. 2, p. 578) is taken from a photograph, and may be accepted as fairly accurate.

On the sketch which I made of it in 1863, my first impression is thus recorded :—"If this stone is ancient, it has been roughly squared since



Figs. 3 and 4. Dedication Crosses, Elgin Cathedral.

the ornament was cut; and it is improbable that the lettering is of the same age as the tracery." This first feeling,—that the inscription was of a later date than the figure or monogram,—was strengthened when the stone was afterwards examined. I did not myself observe the addition to the figure, which makes it evident that the  $\chi\rho$  are intended to be embodied in it. Apart from this, and cutting off what may be called the handle, the figure appeared to me to have some resemblance to the so-called crosses of consecration—to those, for instance, which are found on the Elgin Cathedral, Pluscarden Abbey, and the parish church of Crail, of which woodcuts are given in figs. 3, 4, 5, and 6.

The general shape of this stone and the resemblance between the figure on it and the common form of the crosses of dedication, inclined me at

<sup>1</sup> New Statistical Account, Wigtonshire, p. 164.

first to regard it as a large stone, which had originally formed a part of some building,—perhaps of the Abbey at Whithorn,—and on which

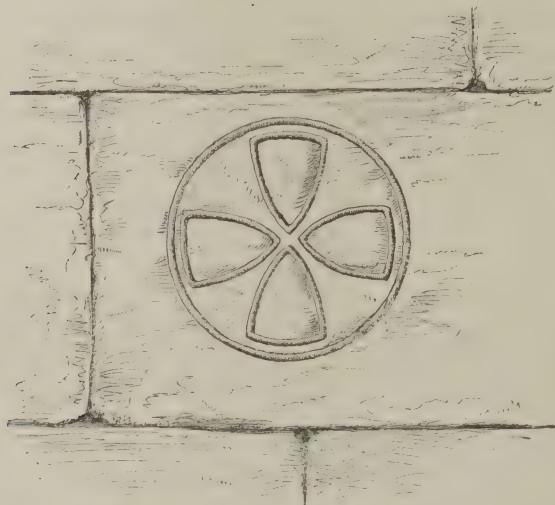


Fig. 5. Dedication Cross, Pluscarden Abbey.

the rude inscription had been cut when it was afterwards set up in its present position. But Dr Stuart has shown that the stone has a greater interest and value than I was led to attach to it, and with his permission I give here the notice of it, which appears in the second volume of his work on the Sculptured Stones. (*Notices of the Plates*, p. 53).



Fig. 6. Dedication Cross,  
Parish Church of Crail.

"The Cross-slab" (Plate lxxvii. of his work) "stands on the high ground above the town of Whithorn, on the side of the road leading towards the Isle of Whithorn.

It is about four feet in height by two in breadth. Its original site is unknown, but it may have been placed at

the 'Chapel on the hill,' where King James IV. made one of his offerings when in pilgrimage to St Ninian in 1506.

"On the upper part of one of the faces is a cross within a circle, with the following inscription curiously arranged, in letters obviously of early date, and resembling the inscriptions on the ancient Welsh stones—'LOC ITI PETRI APVSTOLI.' The monogram is added to the upper limb of the cross on the right hand, which may be regarded as another evidence of the early date of the monument. The occurrence of the monogram on the pillars at Kirkmadrine has been already noticed. Except in these two instances it has not yet been observed on any other Scotch monument.

A small hole is made on the top of the stone, like those found on the crosses at Bewcastle and Rothbury.

"We are told by Fordun<sup>1</sup> that in the year 1260, a cross of great magnificence was dug up at Peebles. The popular belief was that it had been hid in the times of persecution in the second century. The stone on which the cross rested had the following inscription—*Locus* (or *Locus*) *Sancti Nicholai Episcopi*."<sup>2</sup>

Dr Stuart gives the inscription on the Enoch stone as LOC ITI PETRI APVSTOLI, and so does the photograph from which the sketch given in this paper is taken; but I think there must be some greater uncertainty about the *I* which follows the *C* than his drawings or the photograph show, as my original copy of the inscription runs, LOC STI PETRI APVSTOLI or *Locus Sancti Petri Apustoli*. Dr Stuart says that the letters are 'obviously of early date,' and I accept his opinion as correct, though I confess to some difficulty in believing that their form is not simply a debased one, such as might result from want of education in the person who cut them.

In the wall of the mill at Drumore, in Kirkmaiden, the parish to the south of Stoneykirk, there is built a rough undressed stone with singular figures cut on it. Some ten or twelve years ago I made a rub-

<sup>1</sup> Forduni Scotichron., vol. ii. p. 96.

<sup>2</sup> *Locus* pro sepulchro seu loco sepulchri occurrit passim in vet. inscriptionibus. *Locus*, Feretrum in quo cadaver mortui deponitur.—*Du Cange*, apud verbos.

bing and several sketches of this stone. One of the latter is copied in the woodcut which follows.

Mr Todd, the old gentleman in whose possession I found the drawing of the missing Kirkmadrine stone, and who resided at Drumore, informed me that this stone had been built into the wall of a mill older than the one now existing, that still further back it had been built into the wall of the old Parish Church, and that in his young days it was held in a superstitious veneration. I notice it here because the place in

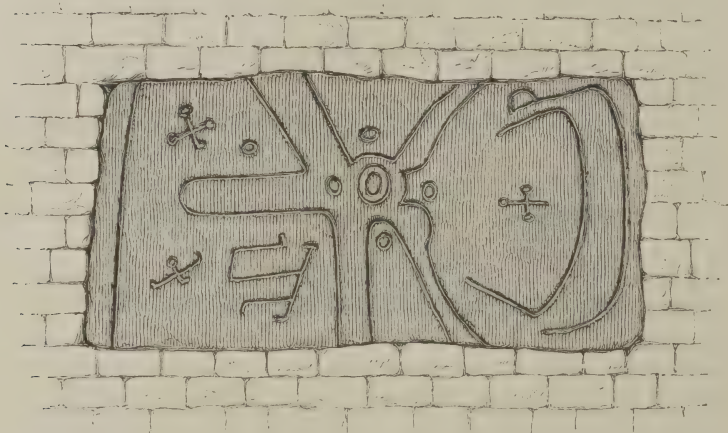


Fig. 7. Stone built into the wall of the mill at Drumore.

which it is found may give it some sort of connection with the remarkable stones at Kirkmadrine, but I have no theory to advance as to the meaning of the curious figures which are cut on it, and which are locally regarded as cabalistic.

St Medan's Cove, or *The Chapel Co'* as it is called, lies between Maryport and East Tarbet, about four miles from Drumore, the village to which allusion has just been made. I visited it on the 25th of February 1864, and what I saw is thus recorded in my journal :—

“The cove is close to the seaside, at the foot of what may be called



a cliff. It is, indeed, a sort of triangular rent in the cliff, the base of the triangle being below. The chapel is immediately in front of the cove proper, and is built of rough stones bound together by good shell lime. The second of the two rough sketches, which follow, shows the

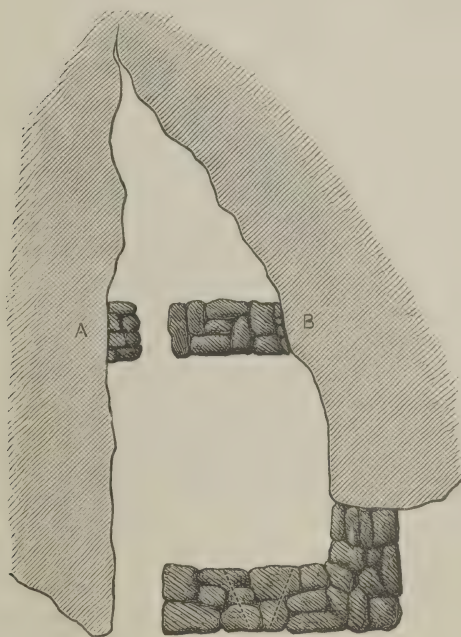


Fig. 8. Sketch Plan of the *Chapel Cove* of St Medan.

(Roughly to Scale.)

style of the mason-work, and also the entrance from the chapel to the cove itself. This entrance or doorway is 4 feet high by  $2\frac{1}{2}$  feet wide, and the wall through which it passes, and which shuts up the cove, is  $3\frac{1}{2}$  feet thick. The front wall of the chapel is 4 feet thick.

The door there is not complete, but its breadth is  $2\frac{1}{2}$  feet. The window of the chapel is also in ruin, but it appears to have been a slit about 1 foot wide outside and expanding to 4 feet inside, as it passes through the wall. This is indicated by dotted lines on the sketch plan, fig. 8. The sole of the window is about  $4\frac{1}{2}$  feet from the ground.

The chapel is roughly  $12\frac{1}{2}$  feet square. The wall to the left as you enter is entirely of rock—smooth and perpendicular—one of the faces, in other words, of the natural fissure. The opposite wall also is chiefly of rock, but it is more uneven than the right wall—the deficiencies or irregularities being made up with mason-work. The mouth of the cove is built up to the height of nearly 15 feet, and this forms the back wall of the chapel. The sides of the chapel are of nearly the same height, but what stands of the front of the chapel is only about 7 feet high. The cove is about 9 feet at its widest and about  $12\frac{1}{2}$  feet at its longest. To some extent it is roofed by the rock, but the chapel is entirely roofless.

The small opening at the inner end of the cove (1 foot wide by 2 feet high) does not appear to lead to an inner chamber. There is no window in the wall which fills up the mouth of the cove and separates it from the chapel. The following sketch, fig. 9, shows the style of the mason-work and the position and character of the doorway.

The three famous pools to which the sick resorted on Co' Sunday—the first Sunday of May—are 60 to 70 feet from the door of the chapel. They are cavities in the rock within the mark of high tides, and are filled with sea-water. They have a somewhat artificial look. The largest is circular, or nearly so, 4 feet in diameter and 6 feet deep, and is called *The Body Pool*. Tradition says that persons labouring under internal or constitutional disorders bathed in it in the hope of obtaining thereby a cure. It was thought peculiarly efficacious in the cases of *Back-gane Bairns*.

The water of the smallest pool, also circular, 6 inches in diameter and 6 inches deep, was that used when the applicant for a cure had sore eyes. The other pool, intermediate in size, about 2 feet long by 1 foot broad, an irregular triangle, was called *The Knee Pool*, a name indicating the disorders under which those bathing in it laboured.

The chapel was frequented on the first Sunday of May, old style. My

guide, an old man of seventy-four, remembers when 20 to 30 people were always to be found there on that day, but he says that they were not the sick, but the young and healthy in search of company and fun. He says that he never knew any one who placed the least faith in washing or bathing in these pools on that day. He tells me, however, that those who then visited the spot always made a show of leaving some offering

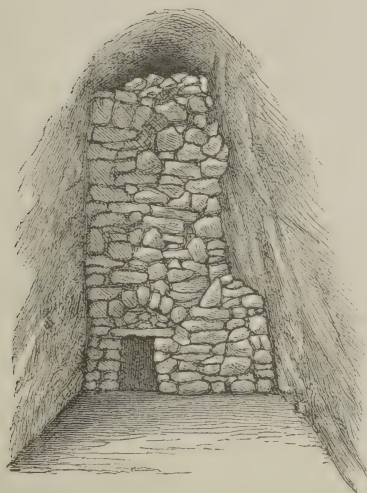


Fig. 9. Sketch of Building at AB in fig. 8.

at the wells or in the chapel—a rag, a button, a nail, or a coin. He assures me that the place is not resorted to now either on that or on any other day. The path, however, which leads from the top of the cliff to the chapel, and to no other place, is well trodden, and I found one offering—a rag—nailed to the wall of the chapel.

There are many entries in my journal in reference to recent cuttings on stone at places of popular resort, and I have recorded that I found

them numerous at St Medan's Chapel. The following, for instance, was deeply and well cut on the rock :—

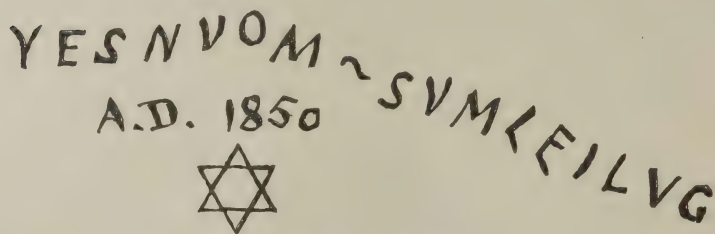


Fig. 10. Cut on the rock at St Medan's Chapel.

Reading from right to left this resolves itself into *Gulielmus Mounsey*—perhaps a wag of a mason, who favours us also with his mark. On a stone of the chapel itself, a man, said to be living in the neighbourhood at the time of my visit, has cut his name in characters which exhibit a peculiar debased form.

I conclude these notes with another extract from my journal, referring also to the same district.

“The bell of the parish church of Kirkmaiden bears on it the following inscription :—*Nicolaus Ramsa Dominus de Dalhuissi me fieri fecit Añō Dñī Millesimo quingentesimo xxxiii. IHS Maria Ihone Morison.*” This Nicholas Ramsay was the grandfather of the first Earl of Dalhousie.







## X.

## NOTES ON THE ANCIENT CATTLE OF SCOTLAND :—

I. THE SMALL SHORT-HORNED OX, *BOS LONGIFRONS*, OWEN.II. THE GREAT LONG-HORNED OX, THE URUS, *BOS PRIMIGENIUS*,  
BOJANUS, AND OWEN.

By JOHN ALEXANDER SMITH, M.D., V.P. S.A. SCOT., ETC. (PLATE XLI.)

It has been suggested that some notes on the ancient Cattle of Scotland, especially as represented by their remains in the Museum of the Society, might not be altogether uninteresting to the Fellows; as a continuation of the papers on the ancient animals of the country, the Rein-Deer, the Elk, and the Irish Elk, already published in the Proceedings of the Society. The Society has accordingly given me permission to reprint some papers read by me many years ago before another Society, and published where they are not now easily accessible, and probably have not been seen by the Fellows of this Society. These notices describe some of the remains of the ancient cattle preserved in the Museum of the Society, and I shall supplement them with details of some of the specimens since presented to the Museum, and others found in different parts of Scotland; giving also a short sketch of their Geological Age and their Distribution, so as to enable us to judge somewhat of the previous existence and prevalence of these animals in our country.

I. THE SMALL SHORT-HORNED OX, *BOS LONGIFRONS*, OWEN.

The following paper gives some details of the Roman remains discovered at Newstead, Roxburghshire, and of the various animal remains found. It is, however, especially taken up with the description of the ancient short-horned cattle; and I think it best, instead of re-arranging, simply to give it in detail, more especially as all the remains described were presented by me to the Museum of the Society, where they are now preserved. Some notes are also given of the so-called wild white cattle still existing in the country.

(The attention of the public has, since this paper was read, been called in an especial manner to these white cattle by the recent visit of H.R.H.

The Prince of Wales to Chillingham Castle, Northumberland. The account of his shooting there a wild bull, on the 10th October 1872, has been published in all the newspapers, especially in the "Illustrated London News," of 19th October and 16th November 1872, where figures are given of Chillingham Castle, the Cattle, &c. The writer states that "it was a fine bull, seven years old, and weighing 70 stones. . . . It exists, we believe, nowhere but at Chillingham; in Scotland, it is to be found in the demesne of Cadzow, at Hamilton on the Clyde."—P. 476.)

The second Notice gives details of portions of additional crania of these short-horned cattle, found in the same locality.

- (1.) NOTICES OF VARIOUS ANIMAL REMAINS, AS THE SMALL SHORT-HORNED Ox, *Bos longifrons*, &c., FOUND WITH ROMAN POTTERY, NEAR NEWSTEAD, ROXBURGHSHIRE; WITH NOTES IN REFERENCE TO THE ORIGIN OF OUR DOMESTIC CATTLE, AND THE "WILD WHITE CATTLE" OF THIS COUNTRY. By JOHN ALEXANDER SMITH, M.D. (With Plate.)<sup>1</sup>

In the winter of 1846–47, during the excavation of a cutting on the Hawick branch of the North British Railway, in the neighbourhood of Melrose, and a little to the east of the village of Newstead, a number of shafts or well-like pits were come upon. There were about five or six of these of a large size, two of which were built round the sides with stones, and were about 20 feet deep, and about 2 feet 6 inches in diameter; the others, being simply dug out of the ground, were about 4 feet in diameter, and varying from 15 to 18 feet in depth. These pits were all found in a space of about 30 yards square, and among them were discovered some 15 or 16 small pits, about 3 feet deep and 3 feet in diameter, which were lined throughout with a layer of whitish clay, some 5 or 6 inches thick. All these pits were filled with a black peaty-like stuff, apparently damp ashes and earth, and in them were observed numerous pieces of Roman pottery, consisting principally of the dark-coloured or smother-kiln ware, coarser varieties of the gray, and yellowish, and also some portions of the fine red or Samian ware, both plain and embossed. Many of these, I have

<sup>1</sup> Read before the Royal Physical Society, Edinburgh, April 2, 1851, and published in the "Edinburgh New Philosophical Journal," New Series, Vol. liv. No. cvii. January 1853.



been informed, might have been preserved entire, or the broken fragments collected together, which, I regret to say, were carelessly thrown with the earth and rubbish to form the adjoining mound. I have been able to collect a few specimens of the different kinds of ware (some of which I exhibit), and have presented them to the Museum of the Scottish Antiquaries. Several silver and brass coins, of the Emperors Vespasian, Trajan, and Hadrian, were also found, and the bones of various animals.

I shall not enter here into the more strictly antiquarian details of the subject (which I have already, some time ago, fully described in another place—see *Proceedings Soc. Ant. Scot.* vol. i. p. 28, &c., and *Archæologia Scotica*, vol. iv. p. 422), farther than to say, that the popular idea of these pits having been wells seems rather absurd, if we consider the number of them clustered together, as well as their near neighbourhood to the River Tweed. English archæologists call pits of this kind rubbish-holes or dirt pits, the name sufficiently pointing out their supposed use; but it certainly seems to me very strange, that the Romans should have taken so much apparently unnecessary trouble for such a purpose, as the land would surely not be so very valuable in those ancient days, and the River Tweed, running at no great distance from them on the north, would seem to afford a simple means for carrying off anything of the kind. I am inclined to the opinion, from considering all the circumstances of the case, that these had been the burying-places of the ancient Roman town, which I believe to have existed in the immediate neighbourhood, and that in these pits were deposited the inurned ashes gathered from the extinguished funeral piles of the dead; the remains of sacrificed animals being then apparently laid over them as their most appropriate covering. However this may be, pits of a corresponding kind have been discovered in various places in England; but, as far as I am aware, this is only the second time anything at all resembling them has been noticed or described as occurring in Scotland. A little to the east of these pits a bed or stratum of considerable size, and consisting apparently of burnt earth, mixed with wood charcoal, was observed, and a little farther to the east another of smaller size was also come upon; and in both of these, various pieces of pottery, and the bones and teeth of animals, were discovered. I regret my not being able to give a full and satisfactory account of the various animal remains which these beds and pits contained, as

most of them were carelessly dug out by the rough hands of the "navvies," and added with the earth to form an adjoining mound. Those I have been able to collect and examine are the following :—

In the first place, however, I must notice the discovery of a *Human Skeleton* in a pit, about 3 feet in diameter, and 10 feet in depth, a little to the south-west of the large built pits. It was found standing erect, with a spear beside it ; the head of the spear was of iron, 14 inches long,



Iron Spear-head, found with Human Skeleton, in Roman shaft, Newstead, Roxburghshire.<sup>1</sup> (In the Museum of the Society.)

and  $1\frac{1}{4}$  inch broad at its widest part, and traces of the handle still remained, the rotten wood falling out on the spear being touched. The skull alone was preserved, and, through the kindness of my friend, Dr Brown, Melrose, is now in my possession (since presented to the Museum



Human Skull, found in Roman shaft near Newstead, Roxburghshire.<sup>1</sup>

of the Scottish Antiquaries). It is well formed, of moderate size, of the Caucasian type, with strongly-marked muscular impressions, and the

<sup>1</sup> I am indebted for the use of these woodcuts, which are given in Dr Wilson's "Prehistoric Annals," to Messrs Constable & Co., Publishers, &c., Edinburgh.

teeth generally sound and little worn, being evidently the skull of an adult male in the prime of life. An examination of it was carefully made by Dr D. Wilson and myself, for his interesting paper "On the Crania of the Tumuli" (read to Brit. Assoc. here), and the following are the details of its various dimensions, according to the terms used by Dr Morton in the "*Crania Americana*:"—Longitudinal diameter, 7 in. 3 lin.; parietal diameter, 5 in. 4 lin.; frontal diameter, 4 in. 6 lin.; vertical diameter, 5 in. 4 lin.; intermastoid arch, 14 in.  $7\frac{1}{2}$  lin.; intermastoid arch, from upper root of zygomatic process, 12 in.; intermastoid line, 5 in.  $3\frac{1}{2}$  lin.; do., from upper root of zygomatic process, 5 in. 6 lin.; occipito-frontal arch, 14 in. 4 lin.; do., from occipital protuberance to root of nasal bones, 12 in. 9 lin.; horizontal periphery, 20 in. 6 lin.; relative capacity (which is here assumed by adding together the longitudinal and vertical diameters and the horizontal periphery), 33 in. 1 lin.

If this skeleton, from the place where it was found, be considered that of a Roman citizen, it must, in my opinion, have belonged to the later period of their occupation of this district; as it was not till then that the practice of burning the dead began to be given up, and the simpler rite of inhumation reintroduced. It is not improbable it may belong to a much later period; but on this difficult subject it is no easy matter to decide.

Of the various remains of the lower animals which were collected, the first I shall notice has been well called "the noble associate of man,"—I refer to the Horse, *Equus caballus*, Linn., to which I consider this back part of a mutilated skull to have belonged, and which seems to have been an animal of rather a small size.

The next is the Common Hog, *Sus scrofa*, Linn., of which a small lower jaw was preserved. It is easily distinguished by its peculiar form, the posterior grinders being oblong, with tuberculated crowns, and the incisors sloping forwards.

The third animal which I have to notice is represented merely by a portion of a round antler, apparently of the Common Stag or Red Deer, *Cervus elaphus*, Linn. It seems to be a part of the first or brow antler; and I was informed, that tolerably perfect antlers, said to be those of the red deer, had also been found; but these I was unable to get for examination.

The other remains consisted of skulls, and apparently other bones of small-sized Short-horned Oxen, which I shall attempt more particularly to describe. I need hardly allude to the well-known fact of the previous existence in Britain of two species of enormous wild oxen,—the one the shaggy Bison, the other the large-horned and mighty Urus (*Bos primigenius*, Bojan.), an animal, according to Cæsar, almost equalling the elephant in bulk ; but, in addition to these, there were also short-horned cattle of a very inferior size, which have been proved to have existed in Britain from the period of the newer pliocene formation, their remains being found in drifts and fresh-water deposits, along with those of the mammoth and the rhinoceros, and in the caves of the same period,—the prey, it may have been, of tigers, bears, and hyænas ; as well as through the deposits of the alluvium ; down to their existence in the bogs, and among the traces of men in the latest of all the formations ; being spared apparently for man's sake, while their dread contemporaries of earlier times had passed from the face of the earth. After this, however, they also seem to disappear as a distinct species, still existing, it may be, in some of the many varieties of our present domesticated ox.

This small short-horned ox Professor Owen has designated the *Bos longifrons*. "It belongs," the learned Professor says in his excellent work on "British Fossil Mammals," "like our present cattle, to the sub-genus *Bos*, as is shown by the form of the forehead, and by the origin of the horns from the extremities of the occipital ridge ; but it differs from the contemporary *Bos primigenius*, not only by its great inferiority of size, being smaller than the ordinary breeds of domestic cattle, but also by the horns being proportionally much smaller and shorter, as well as differently directed, and by the forehead being less concave. The horn cores of the *Bos longifrons* describe a single short curve outwards and forwards in the plane of the forehead, rarely rising above that plane, more rarely sinking below it ; the cores have a very rugged exterior, and are usually flat at their upper part." (*Vide* Owen's "Brit. Fos. Mammal.") With regard to the horn cores, Professor Owen seems to allow some little latitude both as to their size and curvature. In alluding (p. 501) to the Urus being distinguished from the *Bos taurus* by its great size and the direction of the horns, he quotes from Cuvier the following remark, "The naturalist well knows that such characters are neither constant nor



proper for the distinction of species;" and accordingly he admits that the Urus was subject to some variety in these respects; and, in the passage just quoted, he also appears to allow a certain amount of range in the curvature of the horn cores of the *Bos longifrons*; for he says, as already mentioned, they "rarely rise above the plane of the forehead, and more rarely fall below it."

The four skulls in my possession (which I now exhibit) seem to correspond very considerably with these general characters of the *Bos longifrons*, if we consider an allowance made for the slightly upward bend of the horn cores of one at least of them, while they agree with the forward curvature, and scarcely rise above the plane of the forehead. Indeed, two of them (Nos. III. and IV.) seem very closely to resemble the description given by Professor Owen, and the horns of No. IV. especially correspond; the other two, Nos. I. and II. (*vide* Plate), although perhaps slightly different, and of rather a larger size, still agree considerably in most particulars; the largest of these, No. I., being probably a bull, as well from its larger size and more strongly-marked horn cores, as from the proportionally broader and squarer forehead, which is believed to be characteristic of the male; and the others being in all probability cows. I would be inclined to account for their slight differences upon the supposition of these skulls being the remains of cattle which had become domesticated at that early period in our country's history, when the Roman soldier was a dweller in the south of Scotland; and should they be considered as not absolutely identical with the *Bos longifrons*, they seem apparently so closely allied as to afford a strong reason for believing it to be, at all events, the native source from which they had been derived. I have made out a table of their different dimensions, as compared with those given by Professor Owen, and it will be seen how very closely they correspond (*vide* Table). One of the skulls, No. IV., seems to have been sawn through the middle, and, from the appearance of some of the others, you might fancy the animals had been killed by the heavy blow of an axe, or some such instrument, striking them obliquely immediately behind the horns. On examining these skulls, I have been struck by what appears to me to be the large relative size of their prominent orbits, as contrasted with those of the *Bos primigenius*, and even of our domestic cattle. In the *Bos primigenius*, indeed, the orbit seems to be small in

relation to the immense bulk of the skull, and I may also notice the peculiar prominence in the middle of their supra-occipital ridge, especially in the skulls Nos. III. and IV. Since writing these notes, I have read a very interesting paper by Professor Nilsson of Lund, in the "Annals and Magazine of Natural History," vol. ii. of Second Series, "On the Extinct and Existing Bovine Animals of Scandinavia," in which he gives a detailed account of the characters of the *Bos longifrons* of Professor Owen, or Dwarf Ox, a few of which I may enumerate here. He says, "As far as we yet know, it is the smallest of the ox tribe that had lived wild in our portion of the globe; the whole length, from the muzzle to the end of the rump bone, he supposes to have been about 6 feet 8 inches, and, from the slender make of its bones, it had rather resembled a deer than an ox. The forehead upwards over the eyes is flattened, with an edge going along the frontal seam, which is most prominent upwards, and ends with a rounded indenting backwards. Between the eyes is a more or less considerable depression, above which there is often a rising, and beneath which lies the incision for the nasal bones, which go right up to the line drawn between the lower borders of the orbits. (Thus the frontal bones are not longer in this species than they are in the *Urus* or *Taurus*.) The horn cores are small, cylindrical, short, curved only in one direction forwards; sometimes, though seldom, downwards, in the plane of the forehead. The form of the temporal cavity is, behind, transverse-obtuse; before, oblique-pointed; its hinder part (to the angle above the joint of the under jaw), only one-fourth part broader than the forepart. The anterior palatine apertures lancet-shaped, at the back oblique inward-pointed; the back ones lie between the palate bones; the nape transverse, upwards with a vertical indenting, downwards with a vertical edge over the circular foramen of the nape. The skull of this species varies considerably in size, and even something in form, according to its age and sex. The species, however, is always known by a protuberance upon the upper part of the forehead in front, and an indenting backwards." He gives a table, also, of the usual dimensions of young specimens, which I have added to mine, to show their general correspondence.

These four skulls then (before you), which were found near the village of Newstead, Roxburghshire, seem to me to agree so very closely with all these distinctive characters as to prove them to have been very nearly

allied indeed, if not absolutely identical with, the *Bos longifrons*; and should you agree with me in this opinion, then I may say, I consider these as of course proving their existence in the south of Scotland at the time of the Roman occupation of the country, of which, as far as I am aware, these skulls are the only evidence.

*The Origin of our ordinary Domestic Cattle.*—The examination of the skulls of cattle, which had undoubtedly existed in our country at a very remote period, naturally suggests some queries as to the origin of our domestic cattle,—a question of considerable interest as well as difficulty, but into it I do not intend to enter farther than to bring forward a few notes bearing upon this interesting subject.

Professor Nilsson, in his paper already alluded to, describes what he considers to have been an additional species of extinct and fossil ox, found in this country as well as in Sweden; this he calls the *Bos frontosus*,<sup>1</sup> and to it, in passing, I must allude. It is distinguished, he says, by the ridge of the occiput rising high in the centre, convex; the horns, which rest on longer pedicles than among any known species of ox, are short, and directed outwards and backwards, and then bend forwards. The size of the skulls denote an animal which, although much less than the *B. primigenius*, is yet considerably larger than the *B. longifrons*. It belongs, he says, to the country's oldest post-pliocene period; and with regard to the question of the origin of our present cattle, the Professor considers that a race of our domestic cattle have probably been derived from each of the three species he describes of the subgenus *Bos* with the flat forehead; the *B. primigenius*, *B. frontosus*, and *B. longifrons*; none of them, according to the general opinion of naturalists, being derived from the Bison or Aurochs, which is quite different in its characters, and never pairs with the domestic cow.

Other naturalists, however, consider the *Bos primigenius* as the origin from which our domestic cattle are derived. I entirely concur with the opinion of Professor Owen, in considering it highly improbable, in fact almost impossible, that the enormous and savage Uri, of which Cæsar says, "great is their strength and great their speed, and they spare neither

<sup>1</sup> Professor Owen considers the *B. frontosus* a variety of the *B. longifrons*. See p. 618.

man nor beast which they catch sight of ;” and that the man who killed the greatest number of them, even by the pitfall, brings the horns as an evidence of his prowess, and is highly applauded by his countrymen ; and so savage is their nature, that, “though taken never so young, they cannot be tamed” (lib. vi. 27, 28). To suppose beasts like these not only tamed, in opposition to such decided evidence to the contrary, but also so strangely degenerated into the comparatively small sized and placid ox of the present day, seems to me really past belief.

With regard to the opinion, that the domesticated British cattle were originally derived from those of the Roman colonists, we must recollect that we have evidence which proves the existence of numerous herds of domesticated cattle in Britain before ever Cæsar’s troops set foot in the country. This Professor Owen seems rather to overlook when he says (Brit. Fos. Mam., p. 500), that in all probability the “herds of newly conquered regions would be derived from the already domesticated cattle of the Roman colonist.” No doubt to a certain extent this might afterwards be the case ; but Cæsar himself tells us, in his Commentaries, at the very commencement of his operations in England, that “the country was well peopled, and that they possessed ‘*pecoris magnus numerus*’”—(lib. v. 12), numerous herds of cattle ; for “*pecus*” is frequently used when domesticated cattle are spoken of, although certainly its more correct signification refers to sheep ; and that in this instance it refers to cattle, we think is rendered the more likely by his going on to tell us that the natives of the interior of the country seldom troubled themselves with the tillage of the ground, but lived on milk and flesh meat, and clothed themselves with the skins (lib. v. 12, 14) ; all of which facts are proofs of the reference being at least to domesticated herds ; and also, as has been well remarked, that the proverbial fondness of the natives of the southern parts of our island, at the present day, for the “roast beef of Old England,” is a taste of no recent origin. It should also be remembered, that it must have taken no little time before the country could be filled with “numerous herds of cattle,” especially if we consider the difficulty of transit from one country to another in the still earlier and ruder times ; and I may remind you of the fact, of which Cæsar also informs us, that the Germans were, like the British, in possession of numerous herds of cattle before the Romans invaded them, not being



tillers of the ground, but resembling the British in their "milk, cheese, and flesh" diet, derived of course from their domesticated cattle. Considerations such as these would make me rather agree with Professor Owen's other remarks, when, treating of the *Bos longifrons*, he says, "that if it still be contended that the natives of Britain, or any part of them, obtained their cattle by taming a primitive breed, this small-sized, original variety of ox is most likely to have furnished the source." Now, I am inclined to think that the several instances where bones of this animal have been found along with the ancient works of man, as mentioned by Professor Owen, as well as in the present case, are, in all probability, proofs of the early domesticated state of an ox identical with the *Bos longifrons*, which, as already mentioned, had existed in this country from the times of the newer pliocene period.

In support of the opinion of the *Bos longifrons* being the true origin of our domesticated cattle, or at least as showing its more general resemblance to them, I may extract one or two statements from the paper of Professor Nilsson already referred to; for example, when describing the *Bos frontosus*, he says, "It seems to have been about the size of our common cow, from which, however, in form it totally differs." And in the *Bos longifrons*, as already noticed, "the form of the temporal cavity is behind transverse-obtuse, before oblique-pointed; its hinder part (to the angle above the joint of the under jaws) only one-fourth broader than the fore part. Herein it resembles the tame ox, but differs visibly from the *B. frontosus*, in which the back part is twice as broad as the fore part, and also from the *Urus*." And he also states that in the *Urus* the nasal bones are five times as long as broad; in the *B. longifrons* they are nearly six; while in the domestic ox they are six and a half times as long as broad.

It is curious to notice the fact, that the wilder districts of Britain, as the extremity of Devon and Cornwall for example, and the mountainous districts of Wales, as well as our own rugged land, seem all, according to Mr Youatt, to have been originally stocked with cattle having even yet as it were a general family likeness, with moderate sized horns, and of no great general bulk; being the very localities, as Professor Owen well remarks, where the natives would drive their domestic cattle before the advance of an invader, and where of course traces of the original breeds

are most likely to be found. Full allowance must, however, at the same time, be made for the wonderful changes produced on cattle by variety of situation and climate, by pastures, and attention on the part of their possessors to their breeding, so as to favour, from what originally might be an accidental peculiarity, the preservation and gradual spreading over the herd of some fancied excellence, or beauty, or fashion of the time. The Galloway cattle may perhaps be cited as an instance of the changes produced in this way; they are now known as a breed of polled or hornless cattle; whereas it is said that so late as the middle of the last century, the greater part of them had horns of a rather small or medium size.

*The Ancient White Cattle.*—The ancient White Cattle, still existing in some gentlemen's parks, may also, it seems to me, be considered as simply an instance of a beautiful and much-esteemed variety of our domesticated cattle being artificially preserved; but as these are believed by many to be the last remains of our native wild cattle, I may perhaps be excused entering a little into detail on this curious subject.

[Various places in England, where herds of these white cattle were preserved, are enumerated in the "General History of Quadrupeds" of Thomas Bewick, Newcastle-upon-Tyne. I quote from the editions of 1790 and 1824. It is there stated that—

"There was formerly a very singular species of wild cattle in this country, which is now nearly extinct. Numerous herds of them were kept in several parks in England and Scotland; but they have been destroyed by various means; and the only breeds now remaining in the kingdom are in the park at Chillingham Castle, in Northumberland; at Wollaton, in Nottinghamshire, the seat of Lord Middleton; at Gisburne, in Craven, Yorkshire; at Limehall, in Cheshire; and at Chartley, in Staffordshire.

"The principal external appearances which distinguish this breed of cattle from all others are the following:—Their colour is invariably white; muzzles black; the whole of the inside of the ear, and about one-third of the outside, from the tip downwards, red; horns white, with black tips, very fine, and bent upwards: some of the bulls have a thin upright mane, about an inch and a half or two inches long. . . . .

"At the first appearance of any person, they set off at full gallop, and at the distance of two or three hundred yards make a wheel round, and come boldly up again, tossing their heads in a menacing manner; on a sudden they make a full

stop at the distance of forty or fifty yards, looking wildly at the object of their surprise ; but upon the least motion being made, they all again turn round, and fly off with equal speed, but not to the same distance, forming a shorter circle, and again returning with a bolder and more threatening aspect than before ; they approach much nearer, probably within thirty yards, when they make another stand and again fly off. This they do several times, shortening their distance and advancing nearer, till they come within ten yards, when most people think it prudent to leave them, not choosing to provoke them further.

"The weight of the oxen is generally from forty to fifty stones the four quarters ; of the cows about thirty. The beef is finely marbled, and of excellent flavour.

"About twenty years since, there were a few at Chillingham with black ears, but the present park-keeper destroyed them ; since which period there has not been one with black ears. The ears and noses of all those at Wollaton are black. At Gisburne there are some perfectly white, except the inside of their ears, which are brown. They are without horns, very strong boned, but not high. They are said to have been originally brought from Whalley Abbey, in Lancashire, upon its dissolution in the thirty-third of Henry the Eighth. Tradition says they were drawn to Gisburne by the power of music.

"Those at Burton-Constable, in the county of York, were all destroyed by a distemper a few years since. They varied slightly from those at Chillingham, having black ears and muzzles, and the tips of their tails of the same colour ; they were also much larger, many of them weighing sixty stones, probably owing to the richness of the pasturage in Holderness, but generally attributed to the difference of kind between those with black and with red ears, the former of which they studiously endeavour to preserve. The breed which was at Drumlanrig, in Scotland, had also black ears. . . .

"Tame cows, in season, are frequently turned out amongst the wild cattle at Chillingham, and admit the bull. It is somewhat extraordinary that the calves produced by this mode are invariably of the same colour with the wild breed (white with red ears), and retain a good deal of the fierceness of their sire."

Mr Thomas Bell, in his "History of British Quadrupeds," London, 1837, quotes from Mr Cullen "On Live Stock," the description of the appearance and habits of these white cattle in presence of strangers, which I have already given from Bewick's "Quadrupeds," apparently as a proof of the wild nature of these animals. I have, however, again and again seen all these wild habits exhibited by our Highland kyloes, when a boy fishing up a stream on the borders of Roxburghshire, which ran past a low grassy hill and through the remains of an old decaying

wood principally of birches, part, indeed, of the skirts of the old Etterick forest. Here the kyloes remained for many months together, sometimes followed by their calves, seeing nobody but an occasional shepherd, and got almost like wild animals, acting exactly like these Chillingham cattle when they caught sight of us, and we were glad to beat a speedy retreat before they came close enough to make their final rush; which, indeed, they had done some time before, knocking down a man and endangering his life, had not his cries speedily brought the much-needed help, which happened most providentially to be at no very great distance.

Sir Philip Grey Egerton, F.R.S., &c., published, in the "Annals and Magazine of Natural History," vol. iii. p. 241, London, 1839, a note showing the former existence of these white cattle at Bishop's Auckland, in the county of Durham, copied from a manuscript in his own possession, entitled "The Second Yeares Travell throw Scotland and Ireland, 1635." The writer passes a few days, on his road to Scotland, "att Bishoppe Auckland wth Dr Moreton, Bishoppe of Durham." After describing the palace, "chapples," &c., he mentions "A daintie stately parke: where-in I saw wild bulls and kine: w<sup>ch</sup> had 2 calves ruñers; there are about 20 wild beasts all white: will nott endure yo<sup>r</sup> approach; butt if they bee enraged or distressed, verve violent and furious: their calves will bee wonderous fatt."

In Scotland in ancient times these white cattle, according to Boece, were found throughout the Great Caledonian Forest, which formerly covered the country from Callander to Athol and Lochaber; but Boece (to whom I shall afterwards more particularly refer), writing in 1526, says that in his time they were only to be found in the district of Cumbernauld. In writing his account of these cattle, Boece probably had in his mind Cæsar's description<sup>1</sup> of the great long-horned wild and untameable Uri (already referred to), which is not to be wondered at, when we remember they were the only wild cattle known in his day, no fossil remains of the large *Bos primigenius* having then been noticed. Bishop Leslie in 1578 states that the white cattle were then to be found in three places, of the same great district however, Stirling, Cumbernauld adjoining it on the south, and "Kincarnia," probably Kincardine on the Forth.

<sup>1</sup> See quotation from "De Bello Gallico," p. 650.



Bewick, whom I have already quoted, states that they formerly existed at Drumlanrig, in Dumfriesshire, and Pennant in his "British Zoology," vol. i. p. 18 of 4th edition, 1786, mentions "having seen in the woods of Drumlanrig in North Britain, and in the park belonging to Chillingham Castle in Northumberland, herds of cattle, probably derived from the savage breed"—white cattle, with black muzzles and ears; their horns fine, and with a bold and elegant bend. The keeper at Chillingham informed him that the weight of the ox was 38 stones and the cow 28.

Mr Hindmarsh, in his paper on "The Wild Cattle of Chillingham,"<sup>1</sup> gives the following note about the Drumlanrig Cattle, which he had received in 1839 from the clergyman of the place:—"In what year the wild cattle came to Drumlanrig I have not been able to ascertain. The breed are described as being all white, with the exception of the ears and muzzle (which are black), and without manes. They went under the name of the wild Caledonian Cattle." "They were driven away about 1780." The date must have been a little later, as I have already quoted from Pennant his having seen them about this time.

The only locality in which they are now to be found in Scotland is Cadzow Forest, part of the great park of Hamilton Palace. In the "Statistical Account of Scotland," of Sir John Sinclair, Bart., Edinburgh, vol. ii. 1792, the account of the parish of Hamilton is given by Mr John Naismith. After describing the old oaks still remaining in the Duke of Hamilton's park, some of them measuring 20 feet round—the last remains of ancient forests—he says:—"Among these venerable trees grazed the wild cows mentioned by naturalists as an untamed native breed. They seemed to differ in nothing from the domestic kind, excepting that they were all over white, with black or brown ears and muzzles; and, from their manner of life, very shy, and even fierce, when they had not room to fly. They were exterminated, from economical motives, about the year 1760," p. 208. In the account of the parish of Hamilton, by the Rev. Wm. Patrick, in 1835, published in the "New Statistical Account of Scotland," we read that Cadzow

<sup>1</sup> An account of the Chillingham cattle, as descended from the wild cattle of the country, is also given in "A Catalogue of the Mammalia of Northumberland and Durham," by H. T. Meunell and V. R. Perkins. *Trans. Tyneside Nat. Field Club, Newcastle-upon-Tyne*, 1864, vol. vi.

wood "is browsed by about four score white cows of the ancient British breed. Their bodies are milk-white; their ears, muzzles, and hoofs black; and the skin in front, above the hoof, is mottled with black. They are perfectly docile, except when they have calves." My attention has been lately called to a communication to the Royal Society of Edinburgh, by Dr Robert Knox, in April 1838, "On the Wild Ox of Scotland," of which a very short abstract is published in the "Proceedings of the Royal Society," vol. i. 1845. In it Dr Knox, after endeavouring to trace the antiquity of the white oxen during the historic period of Britain, for which, however, he thinks materials are altogether wanting, examined the question as to whether the white cattle of Britain constitute a distinct species of the Bovine tribe, and thinks they do not; but as the domestic ox is now a mixed breed derived from several species, he is at a loss to show to which of these the white ox of Hamilton most approaches; they seem to bear the strongest resemblance, he thinks, to the Galloway breed. Dr Knox states that "many of the bulls have horns, whilst others are polled," and he "suggests, in conclusion, that the type of these cattle can never be satisfactorily made out so long as their breeding is so much interfered with by the destruction of all the calves, which may differ in form or colour from the standard considered by the noble proprietors as essential to the purity of the breed," p. 202.<sup>1</sup>

A fine specimen of a white bull from Hamilton (with black ears and muzzle, horns white, tipped with black, and some very slight black mottling above the hoofs of the fore feet and on the lower parts of the body), is in the Museum of Science and Art. In the report of the Proceedings of the Wernerian Society of March 5, 1842, it is stated that "a splendid specimen of the white bull from the park of Hamilton Palace, presented to the Museum by the Duke of Hamilton, was exhibited." (Edin. Phil. Jour. vol. xxxii. p. 400, 1842). Mr John Gibson, of the Museum of Science and Art, has furnished me with the following measurements of this fine stuffed specimen of the white ox, which enables us to judge pretty nearly of the size of these so-called wild cattle:—

<sup>1</sup> See subsequent Note of Dr Knox's specimen of this ox, p. 614.

	Ft.	In.	Lin.
Length of head from muzzle to line between the horns or top of the head, . . . . .	1	6	3
Length from this line to the root of the tail, . . . . .	7	2	6
Total length of body, . . . . .	8	8	9
Length of horns, . . . . .	1	3	6
Length between tips of horns, . . . . .	2	7	0
Height to top of shoulder, . . . . .	4	2	6

From the politeness of a correspondent at Hamilton I learn these cattle are now a considerable herd, but they are all without horns or polled, and have been so for some time past. By the liberality of the Duke of Hamilton, several are slaughtered every year, in order to afford a New Year's Day dinner to the poor of the town, all the clergyman sending in a list of the poor of their congregations for the purpose.

In "Black's Picturesque Tourist of Scotland," Edinburgh, the annexed figure (for the use of which I am indebted to our well-known publishers Messrs A. & C. Black) is given in illustration of the remarks on the white cattle of Hamilton. It is there stated that at Cadzow "the famous breed of Scottish wild cattle are still preserved." "They were expelled on account of their ferocity about 1760, but have since been restored." (Edit. 1849).<sup>1</sup>



We find then, among these various herds of park-kept, so-called Wild White Cattle, at present or lately in existence in the country, a considerable diversity in their general appearance; some with red ears, others with black, and this latter peculiarity occurring occasionally even among those of the red-eared variety, as mentioned by Bewick of the Chillingham cattle; and some having horns, while others have none, as the breed of wild white cattle at Gisburne, in Craven, Yorkshire, &c. (*vide* Bewick's Quadrupeds); and, besides other little peculiarities, we have also the occurrence from time to time among these breeds of cattle more or

<sup>1</sup> I have added from my notes these additional details of the "ancient White Cattle."

less marked with brown or black spots, but these individuals are always killed, to prevent this variety spreading among the herd. "And when the calves have been taken young, they have been completely tamed, and become like the common domestic ox, feeding as rapidly in confinement as a short-horned steer."—(*Vide* Paper "On the Wild White Cattle of Chillingham," by William Hindmarsh, Esq., in the *Annals of Nat. Hist.* for 1839, vol. ii.)

All these peculiarities seem to me to favour the idea of these cattle being merely an ancient fancy breed of domesticated cattle, preserved for their beauty in the parks of the nobility.

It is well known that the colour of many animals is changed by domestication, and that they frequently become more or less entirely white; and it is interesting, as showing apparently where some of the last traces of the original colour of an animal, which has been changed in this way, may be expected still to remain, to notice the remark of Professor Bell of London, in his valuable work on "British Quadrupeds," that "it appears the ears are more liable to retain colour in animals which become white by domestication than any other parts. This is the case, as we have seen, with the guinea pig, and it is no less true of the ox, and some others."—(P. 355.) I have heard a similar remark made by Professor Fleming, that he had never seen an entirely white ox, but that the ears always remained of a different colour. Now, in these park-kept white cattle, we have this same peculiarity also existing; and Professor Nilsson alludes in his paper to the well-known fact, that no race of wild oxen of this white colour is known to naturalists.

In Mr Hindmarsh's paper, already referred to, he quotes passages from several ancient authors, to justify the hypothesis of their being the remains of the ancient wild cattle of the country. These authors are, Hector Boece or Boethius, "*Scotorum Historiæ a Prima Gentis Origine*," published at Paris in 1526; and Bishop John Leslie, "*De Origine, Moribus, et Rebus Gestis Scotorum*," published at Rome in 1578. Now these, I suspect, must be considered, not as two independent authorities, but merely as one; for the Bishop, in his book, published some fifty-two years after the other, gives manifestly, in this instance, almost a *verbatim* copy of the statements of Boethius. To show this, I may compare the original passages, which refer to the existence of these white cattle in the



Great Caledonian Forest, which formerly covered the country from Stirling to Athol.

(1.) BOETHIUS, "*Scotorum Historiæ a Prima Gentis Origine*," fol. 6, l. 63; *Scotorum Regni Descriptio*, &c., of edit. Paris 1574:—"Hic initia olim fuere Caledoniæ sylvæ, manentibus videlicet veteribus adhuc nominibus Callendar et Caldar, excurrens per Monteth et Ernevallem longo tractu ad Atholiam et Loquhabriam usque. Gignere solet ea sylva boves candissimos in formam leonis jubam ferentes, cætera mansuetis simillimos, verum adeo feros indomitosque atque humanum refugientes consortium, ut quas herbas, arboresque aut frutices humana contrectatas manu senserint plurimos deinceps dies fugiant: capti autem arte quapiam (quod difficilimum est) mox paulo præ mæstitia moriantur."—"Hujus autem animalis carnes esui jucundissimæ sunt, atque in primis nobilitati gratæ, verum cartilaginose. Cæterum quum tota olim silva nasci ea solerent: in una tantum nunc ejus parte reperiuntur, quæ Cummirnald appellatur, aliis gula humana ad interuicem redactis."

(2.) BISHOP LESLIE, "*De Origine, Moribus, et Rebus Gestis Scotorum*" Rome, 1578, p. 19, (*Scotia Descriptio*):—"Ab his regionibus vastissima illa olim Caledonia sylva initium sumpsit, ut quædam locorum nomina hodie indicant."—"In Caledonia olim frequens erat sylvestris quidem bos, nunc vero rarior, qui colore candissimo, jubam densam, ac demissam instar leonis gestat, truculentus, ac ferus ab humano genere abhorrens, ut quæcunque homines vel manibus contrectarint, vel halitu perflaverint, ab iis multos post dies omnino abstinerint."—"Ejus carnes cartilaginose, sed saporis suavissimi. Erat is olim per illam vastissimam Caledoniæ sylvam frequens, sed humana ingluvie jam assumptus, tribus tantum locis est reliquus, Stirivilingi, Cumernaldix, et Kincarniæ."

As for Boethius himself, we must remember, that though perhaps a good enough authority as to anything that happened under his own observation, he is so credulous as to believe apparently all that was told him, however extraordinary; so that his description of these cattle, of the purest white, maned like lions, untameably wild, and fleeing the very neighbourhood, or even the scent of men; and which apparently he had never seen, must all be taken with a considerable allowance. In all probability they were nothing more than strayed domestic cattle, which, in the course of years, had lapsed into a semi-wild state. As an instance of his

credulity, I may refer, in the words of Bellenden's Translation of 1553, to his account of the extraordinary animal described by Sir Duncan Campbell,—“That out of Garloll, ane loch of Argyle, the yeir of God M.DX yeiris, came ane terrible beast, als meikil as ane grew hound, futit like ane ganar, and straik down greit trees with the dint of her tail, and slew thre men quhilks wer at their hountis with thre straikis of her tail; and wer not the remanent hunteris clam up in strang aikis, they had been all slane in the samin maner.”—(Chap. vii., *Bellenden's Trans. of Boethius' History*.)

It is curious, however, to trace the description of these white cattle, maned like lions, &c., published by Boece in 1526; as it seems to have been adopted by naturalists on his authority, and to have apparently been the only source from which they derived their descriptions.

In the “*Descriptio Britanniae, Scotiae, Hiberniae, et Orcadum*” of Paulus Jovius, published at Venice in 1548, we have the following passage:—

“Cæterum Caledonia sylva antiquis nota scriptoribus, quæ hodie Callendar appellatur, vasta sui magnitudine è mediterraneis ad maritima variis anfractibus se extendit. In ea inusitati generis feras, et volucres esse tradunt, equos silicet agrestes et indomitos; atque item tauros summæ feritatis leonum similitudine jubatos, Bisontibus quos Sarmatia gignit, populusque Romanus aliquando in arena spectavit, torvitate aspectus non omnino dissimiles. Ii vestigia hominum insidiarum metu astutis sensibus devitant, atrectatasque forte hominis manu frondes quum olfecerint, repente profugiunt, nec, capti labyrinthis et foveis ulla omnino pabuli copia placantur. Servitutis enim contumeliam non diu ferunt, in eaque maestitia, contumaci spiritu efflato, citissimè moriuntur; tanta autem iracundia et robore venatores invadunt, ut eos nonnunquam transfossos cornibus, vibratosque in sublime, crudeliter interimant.”—(P. 32, a., Venet., 1548.)<sup>1</sup>

This author simply repeats again the account given by Boethius of these wild cattle, untameable and of extreme ferocity, maned like lions. He adds, however, the statement, probably from his own knowledge of the European Bison,—that to the Bisons which Sarmatia produces, and

<sup>1</sup> The quotation from Paulus Jovius was only obtained after this paper was first published.—J. A. S.

the Roman people have sometimes seen in the arena,—in the savageness of their aspect they are not altogether unlike; and following the passage I have quoted above, he goes on to detail the story of the narrow escape made by King Robert Bruce from being destroyed by one of these animals, by the bravery of one of his followers, exactly as the circumstance is detailed by Boethius; but as I have omitted this account in my quotation from Boethius, I need not quote it from Paulus Jovius.

This, however, appears to be the first time these cattle were compared to the Bison of Central Europe, and in the next author I shall quote, we find a step taken in advance, and Paulus Jovius's comparison of the wild cattle of Scotland to the Bison is now expanded into a description of these wild cattle as the *Bison album Scoticum*.

Aldrovandus, then, in his work, "*Quadrupedum Omnium Bisulcorum*," Bonon, 1632, referring to the older work of Gesner, "*Historia Animalium*," 1551, notices these white cattle, in all probability from their being described as having manes like lions, and not altogether unlike the Sarmatian Bison, under the name of *Bison album Scoticum*, *sive Calydonicum*, using the very description of Boece already so often quoted.

Then, again, in the "*Historia Naturalis de Quadrupedibus*" of John Jonston, M.D., published at Amsterdam, 1657, we have this same description of Boece again in part repeated; in two different places, however,—first, in the chapter "*De Bove Domestico*," and again, "*De Bobus Feris*," with a marginal reference to "*Aldrovand. Histor. Bisul.*" To show this more fully I may quote the passages. Art. 1, *DE BOVE DOMESTICO*, *Differentiæ*, p. 34:—"In Scotia boves sunt sylvestres colore candidissimo, juba densa ac demissa, truculenti et feri, adeoque ab humano genere abhorrentes, ut ab iis quæ homines vel manibus contrectarint, vel halitu perflaverint, per multos dies abstineant, dolo capti, moriantur, Carnes cartilagosæ habent." And again, Art. 2, *DE BOBUS FERIS*, p. 1. *De Bisonte*:—"Huc pertinet et *Bison Scoticus*. Candidissimum esse aiunt, in formam leonis jubam ferre, cætera mansuetis simillimum, verum adeo ferum et indomitum, humanique consortii hostem, ut quas herbas aut frutices humana contrectatas manu senserit, plurimos deinceps fugiat: captum autem arte quadam, mox præe mæstitia mori." So that we have now *two species*, apparently, made in this way out of Boece's description.

Accordingly, in the "*SCOTIA ILLUSTRATA, sive Prodrömus Historiæ*

*Naturalis*," of Robert Sibbald, M.D., published at Edinburgh in 1684, we find this Scottish naturalist quoting from Jonston's work, referred to above, adding, however, the following remarks:—"Quæ quidem ab Historicis nostris petita sunt, sed confirmatione egent. In pluribus locis montanæ partis Scotiæ reperiuntur quidem Boves feri, albi quoque: sed non ita truculenti, neque forma a domesticis differunt. An jubati Bisontes nunc extant, nescio."—*De Bisulcis Ruminantibus Cornigeris*, p. 7. So that Sibbald seems to doubt the existence of the so-called *Bison Scoticus*, though he admits that white cattle, exactly however resembling the domesticated breeds, and by no means so fierce and savage as they are described, still run wild in some of the mountainous districts of the country. The original source of the whole statement is apparently the description given by Boece, and repeated by Paulus Jovius, Bishop Leslie, and others, which I have already taken the liberty of criticising, as being, in all probability, a very exaggerated account.

Moreover, if we search still further back in the records of a much greater antiquity, we find evidently the same kind of white cattle described in such a way as seems to me to imply, without a doubt, their thorough domestication. In the "Leges Wallicæ," of "Howell Dda," the Welsh laws of King Howell the Good, which date from about A.D. 942-3, or before the middle of the tenth century,—*vide* Translation by Gul<sup>o</sup>. Wottonus, London, 1730,—we find white cattle with red ears, in all probability the same breed of cattle as those I have been referring to, ordered to be paid as a compensation for offences committed against the Princes of Wales—(*vide* Lib. 1, chap. vi., pp. 10-11):—

"*De solvenda Multa Regis*.—Multa pro injuria Regi Aberfraviæ illata hoc modo solvenda. Centum vaccas pro qualibet centuria subditione ejus Reus solvet, et cum singulis centenis vaccis unum Taurum auribus rufis præditum cum Virga aurea ejusdem cum Rege longitudinis, magnitudine digiti ejus minimi, et crassitudine unguis aratoris qui per novem annos araverit. Aurum nemini debitur nisi Regi Aberfraviæ."—"3. Domini Dinevoræ privilegium est accipere pro compensatione injuriæ sibi illatæ vaccas albas aures rufas habentes, totidem quot ordine sibi succedentes pertingent ab Argoëlia (*e*) ad Dinevoram, et cum singulis vicenis vaccis taurum ejusdem coloris. Aurum nemini penditur nisi Regi Dinevoræ vel Regi Aberfraviæ."



“(e) *Loci nomen prope Dinevoram, sibi ubi præcise situs sit ignoratur.*”

It seems very evident that such numbers of living wild cattle could never be exacted as payment of a fine, but that beyond all doubt domesticated cattle are here referred to, and apparently, from the special character of the notice, a favourite variety, highly prized for their beauty and peculiar colour. To show how highly this breed of cattle had been valued at a very early period, I may quote several passages from Mr Youatt's well-known work “On Cattle.” He says (p. 478), “Howel dha, or Howell the Good, describes some of the Welsh cattle, in the tenth century, as being ‘white, with red ears,’ resembling the wild cattle of Chillingham Castle. An early record speaks of a hundred white cows with red ears being demanded as a compensation for certain offences against the Princes both of North and South Wales. If the cattle were of a dark or black colour, one hundred and fifty were to be presented. When the Cambrian Princes did homage to the King of England, the same number of cattle, and of the same description, were rendered in acknowledgment of sovereignty. Speed tells us that Maud de Breos, in order to appease King John, whom her husband had offended, sent to his Queen a present from Brecknockshire of four hundred cows and a bull, all white, and with red ears. Whether this was the usual colour of the ancient breed of Welsh and British cattle, or a rare variety, esteemed on account of its beauty, and chiefly preserved in the parks of the nobles, we are unable to determine. The latter is the more probable supposition; and the same records that describe the ‘white cattle with red ears,’ speak also of the ‘dark or black-coloured breed,’ which now exists, and which is general throughout the principality.”

It appears to me only natural to suppose that these were all domesticated and surely not wild cattle, to which reference has been made in these various passages; and that they were a highly-prized variety is shown by their colour being specially mentioned, as well as their being valued at a half more than the dark-coloured, which were most probably the more common breed of the district. And let me call to your recollection a remark of Hector Boece himself, in the passage already quoted,—that, with the exception of their colour and manes, the wild white cattle are exceedingly like the ordinary tame or domesticated breed; and that their flesh is very pleasant food, and much approved of by the nobility;—both of which

observations, in my opinion, tend to show the truth of the views now stated.

Youatt says, the old legends of Wales speak of the ancient domesticated cattle being of a dark or reddish colour, resembling considerably the Devon cattle; and according to the same authority, "the slightest observation will convince us that the cattle in Devonshire, Sussex, Wales, and Scotland, are all essentially the same." He considers that red had been their primitive colour, as he traces it through all these varieties, and declares that even where another colour, as black, now prevails, the memory of the red still remains, and has a superstitious reverence paid to it in the legends of the people. In Scotland also there has always existed a popular feeling of preference for the red cow, it being declared to be "luckier," and to give more milk. It is, perhaps, worthy of notice, in relation to the question of colour, that the *Urus* or *B. primigenius* is believed to have been of a dark or black colour; and in what I consider to be a very rare specimen of a portion of the skull of the *Bos longifrons*, with the horns and part of the skin and hair still attached, which was kindly shown me by Professor Fleming, the colour of the hair, as far as you can judge from a specimen found in an Irish bog, is also of a black or dark reddish or brownish tint; it may be, bearing a relation to the very colour to which I have been alluding.

I may remark that the small size of the domesticated cattle in this country, from the very earliest times, seems to me an additional and unanswerable objection to their having descended from the gigantic *Urus*. Professor Nilsson, however, in his paper already referred to, considers "that we may take it as a given and general rule, that the tame race is always less than the wild species from which it springs." Now, this is a proposition which I am very much inclined to doubt, believing, as I do, that animals are by no means necessarily degenerated and dwarfed in their dimensions, as the Professor supposes, when taken under the care and protection of man, but, on the contrary, are rather increased in size, by careful tending and feeding, as well as by attention to their breeding; and examples in proof of this view, I am inclined to think, may be found in our domesticated dogs, horses, &c. We know, from such specimens as these skulls I have described, the small size of at least some species of cattle in the Roman period; and others, of an exactly corresponding kind

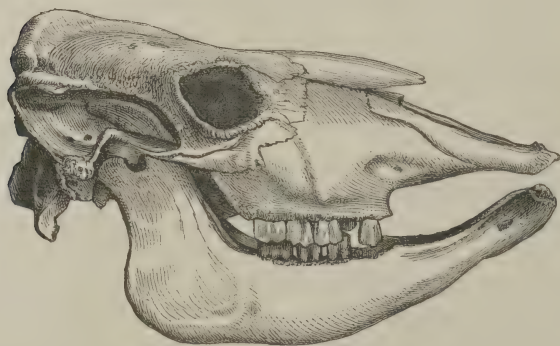
and size, have been found, as already mentioned, belonging to an immensely older geologic period, carrying us back in this way to times altogether prior to the existence of man. Then, in much later times, as shown in the Welsh Laws of Howell the Good, in the tenth century (*vide* Wotton's *Trans. Leges Wallicæ*), we have apparently given to us the different sizes of the yokes used for ploughing; and if so, from these we find that the cattle of that date must have been much smaller than those of the present day. Thus we find it stated in Lib. III., chap. ix., p. 279, *De Societate Arationis*:—"Jugum breve quattuor pedibus (longum); Jugum maiale octonis pedibus; Jugum axillare duodenis pedibus; Jugum longum senis denis pedibus." In other passages of these laws, we have these various yokes referred to as measures of the land, being apparently taken from the well-known sizes of the different yokes themselves. The cattle, Mr Youatt says, were always yoked abreast, and the short yoke for two oxen was only four Welsh feet of nine inches each, or three feet English in length, increasing in the same proportion for four oxen; and for eight, which was sixteen Welsh feet, or twelve feet English long. Chap. ix., 2 of Lib. III. of *Leges Wallicæ*:—"Uncia longitudine trium granorum hordeacorum constat—Palma tribus unciis—Pes tribus palmis;" showing in this way of what these measures consist. Mr Youatt declares that an ox of the present day would require a somewhat larger space than eighteen inches in order to work or even to stand. (*Vide* Youatt "On Cattle.") And when we remember the small size of our domesticated cattle in ancient times, it is interesting to notice another remark in page 3 of his valuable work, in regard to the comparative size of the well-tended cattle of the present day:—"There is no doubt that within the last century their size has progressively increased in England, and kept pace with the improvement of agriculture." How far this may go on seems rather a difficult matter to determine, as well as to what extent a species of animal like the ox may be changed from its original type, degenerating, it may be, in some places, and improving in others, by being long under the dominion and management of experimenting and calculating man.

These rough notes I consider as tending to show the extreme improbability of our domestic cattle being the descendants of the large-sized *Bos primigenius*; and shall I say, the probability of their true progenitor

being this small and equally-ancient *Bos longifrons*, or short-horned ox, which has been proved to have existed in this country from the later geologic periods down at least to the bustling times of busy man.

In conclusion, I have to return to my catalogue of animal remains, and, making a rapid descent in the scale of animal life, allude to an ancient mollusc, which had been prized then as now as a delicacy for the table, and is the last of these relics I have to notice, which were found with the traces of the Roman occupation of this district; I refer to the Common Oyster, *Ostrea edulis*,<sup>1</sup> of which this shell, measuring  $4\frac{1}{4}$  inches in greatest diameter (which I exhibit), and several others were found; affording a proof of the large size of this ancient shell-fish, as well as of the fondness of the Roman epicure, even at this inland station, for the celebrated oysters of our British seas.

<sup>1</sup> My best thanks are due to my friend Adam Smith, Esq., Darnick (now of Melbourne, Australia); and to Mr Francis Burnet, Newstead (since deceased), for their zeal in procuring for me these various specimens.



Side-View of Skull of "White Ox" from Hamilton, formerly in Dr Knox's Collection.  
(See pp. 602 and 614.)



Table of Measurements of various Specimens of Skulls of the Bos Longifrons (Owen).

	Skulls found near Newstead. (See Plate.)				From Prof. Owen's Brit. Fos. Mam.					Prof. Nilsson, of Lund, Young Specimens. <sup>3</sup>		
	In. lin.	In. lin.	In. lin.	In. lin.	In. lin.	In. lin.	In. lin.	In. lin.	In. lin.	In. lin.	In. lin.	In. lin.
	No. I.	No. II.	No. III.	No. IV.	(1.) <sup>1</sup>	(2.)	(3.)	(4.)	(5.)	(1.)	(2.)	(3.)
Length of the skull from the supra-occipital ridge to front edge of intermaxillary bone,	18.6	17	16	...	...	...	...	...	...	16	...	...
Length from supra-occipital ridge to nasal bones,	8.6	8	8	...	8	8	...	...	...	7.2	...	8.4
Length from roots of horn cores to upper edge of orbits,	4.2	3.6	3.6	...	...	...	...	...	...	3.4	...	...
Length of orbits,	2.9	2.6	2.6	...	...	...	...	...	...	2.4	...	...
Breadth of orbits,	2.8	2.5	2.5	...	...	...	...	...	...	...	...	...
Length from orbit to end of maxillary bone,	8.3	7.9	7.6	...	...	...	...	...	...	8.4	...	...
" from orbit to front edge of intermaxillary bone,	10	9.3	9	...	...	...	...	...	...	10	...	...
Breadth of forehead, between roots of horn cores,	6.3	5.6	5.8	5.6	5	5	5	5	...	5	5.3	5.2
Breadth across narrowest part about midway between roots of horn cores and orbits,	6.9	6	5.9	5.6	...	...	...	...	...	5.4	...	...
Breadth of skull across middle of orbits,	6.9	6.6	6.3	...	6.9	6.6	...	...	...	nearly 7	7.5	...
Horn-cores, across front of intermaxillary bones,	3.3	3	3	...	...	...	...	...	...	...	...	...
" circumference of base,	6.9	5	4.3	4	4	3.6	4.6	...	...	4.3	7.1	4.2
" length following outer curvature,	6	4.6	3.6	3	4	3.6	4	4	7	4	...	3
" span across, from tip to tip,	15.6	11 <sup>1</sup>	10.6 <sup>1</sup>	9 <sup>1</sup>	12	11	12	11.3	...	...	...	...
Length of alveolar sockets and molar teeth of upper jaw,	5	4.9	4.9	...	...	...	...	...	...	5.2	...	...
Height of skull from supra-occipital ridge to upper edge of foramen magnum,	4.5	...	...	4.3	...	...	...	...	...	4	...	...
Height of skull from supra-occipital ridge to the base of the skull,	5.11	...	...	5.9	...	...	...	...	...	5.5	...	...
Breadth of occipital condyles posteriorly,	4.3	...	...	...	...	...	...	...	...	...	...	...

<sup>1</sup> These measurements are obtained by doubling the length from the tip of one horn core to central suture of forehead.

<sup>2</sup> (1.) Hunterian, Irish bog. (2.) Mr Ball, bog, Westmeath. (3.) Mr Brown, Clacton beds (freshwater). (4.) Mr Woods, bog, Bridgewater. (5.) Larger size, supposed to be bull, and others cows.—*Prof. Owen*.

<sup>3</sup> Professor Nilsson says this species seems to vary considerably in size, according to age and sex.

## NOTE OF THE "WILD WHITE OX" OF CADZOW, HAMILTON.

In the very short abstract of Dr Robert Knox's paper already referred to "On the Wild Ox of Scotland," published in the "Proceedings of the Royal Society of Scotland," vol. i., 1845, p. 201, he says:—"The cranium of the wild ox of Hamilton differs very much from those of most domestic



Skull of White Ox from Hamilton, formerly in Dr Knox's Collection.  
(9 inches 9 lines in length.)

oxen, particularly in the breadth of the forehead, shortness of the nasal bones, and configuration of the interior of the nostrils. Many of the bulls have horns, whilst others are polled." At the sale of Dr Knox's collections, a polled skeleton of the Hamilton wild ox was purchased by Professor Goodsir, labelled by him *Urus Scoticus*, and added to the Anatomical Museum of the University. This is undoubtedly the animal to which Dr Knox refers in his paper. Through the kindness of my friend

Professor Turner, I have had an opportunity of examining it, and, with the assistance of Mr A. B. Stirling, add a few measurements for comparison with the other varieties of cattle described. I am also able to give figures of the skull of this Hamilton ox (pp. 612 and 614), which, so far as I am aware, have not yet been published:—

*Measurements of Skull of Recent White Ox from Hamilton.*

	In.	Lin.
Length of skull from supra-occipital ridge to front edge of intermaxillary bones, . . . . .	19	9
Length from supra-occipital ridge along centre of forehead to nasal bones, . . . . .	9	9
Length from nasal suture to front of intermaxillary bones, . . . . .	10	3
Length from centre of occipital ridge to upper edge of orbits, . . . . .	8	3
Length of orbits, . . . . .	2	9
Breadth of orbits, . . . . .	2	3
Length from front of orbit to front of maxillary bone, . . . . .	8	6
Length from front of orbit to front edge of intermaxillary bone, . . . . .	11	3
Length of nasal bones—		
Right, . . . . .	5	9
Left, . . . . .	5	6
Breadth of nasal bones, . . . . .	2	6
Breadth of forehead at upper part, . . . . .	6	0
Breadth across about midway between top and orbits, . . . . .	7	9
Breadth of skull across middle of orbits, . . . . .	9	3
Breadth across front of intermaxillary bones, . . . . .	3	9
Length of alveolar sockets of upper jaw, . . . . .	5	0
Height of skull from supra-occipital ridge to upper edge of foramen magnum, . . . . .	5	3
Height of skull from supra-occipital ridge to the base of the skull, . . . . .	7	0
Breadth of occipital condyles, posteriorly, . . . . .	4	5
<i>Lower jaw</i> , length, . . . . .	15	6
Depth from condyloid process to base, . . . . .	7	0
Depth from temporal process to base, . . . . .	9	0

*Measurements of Skeleton.*

<i>Atlas</i> , length through foramen, . . . . .	2	6
Greatest breadth below, . . . . .	7	6

	In	Lin.
<i>Axis</i> , length, . . . . .	5	0
Breadth below, . . . . .	4	6
<i>Scapula</i> , length (without cartilage), . . . . .	16	6
Breadth across base, . . . . .	10	0
<i>Humerus</i> , greatest length, . . . . .	12	9
Breadth across lower articulation, . . . . .	3	6
<i>Radius</i> , length, . . . . .	11	6
Breadth of lower articulation, . . . . .	3	6
<i>Ulna</i> , length from olecranon, . . . . .	14	6
<i>Carpus</i> , length, . . . . .	2	3
<i>Metacarpus</i> , length, . . . . .	8	0
Breadth across lower articulation, . . . . .	3	0
<i>Phalanx</i> , first, length, . . . . .	2	3
Second, length, . . . . .	1	6
Hoof, length, . . . . .	2	0
<i>Pelvis</i> , length between tub. of ilium and tub. of ischium, . . . . .	15	0
Breadth across tubs. of ilium, . . . . .	25	0
Breadth across tubs. of ischium, . . . . .	13	0
Breadth across acetabula, . . . . .	8	6
<i>Femur</i> , greatest length, . . . . .	16	0
Breadth across lower articulation, . . . . .	4	6
<i>Tibia</i> , length, . . . . .	14	0
Breadth across lower articulation, . . . . .	2	6
<i>Calcaneum</i> , length, . . . . .	6	0
<i>Tarsus</i> , length, . . . . .	2	6
<i>Metatarsus</i> , length, . . . . .	9	0
Breadth across lower articulation, . . . . .	2	6
<i>Phalanx</i> , first, length, . . . . .	2	6
Second, . . . . .	1	3
Hoof, . . . . .	2	0

This ox is therefore rather larger than the usual size of the ancient *Bos longifrons*; but considerable range of size, as well as variety in the direction of the horns, must be apparently allowed even in the latter. The more massive skull and breadth of forehead is partly due probably to this Hamilton ox being a bull; and the principal difference is in the shortness of the nasal bones, and the configuration of the interior of the nostrils which is apparently due to the greater projection forwards and downwards towards the septum of the nose, of a lamina from the lower



part of the upper half of naso-turbinal bone. Probably mere individual varieties of size and proportion in a young animal.

In the Museum of Science and Art there is a skeleton of an ordinary polled ox resembling that of the Hamilton White Ox, being nearly of the same size. The skull measures in

	In.	Lin.
Length from centre of occipital crest to anterior part of intermaxillary bones, . . . . .	19	9
Do. to nasal suture, . . . . .	9	3
Length from nasal suture to front of intermaxillary bones, . . . . .	10	6
Nasal bones in length, right, . . . . .	6	6
Do. left, . . . . .	6	6
Do. in breadth, . . . . .	1	10
Length of orbits, . . . . .	2	6
Breadth of orbits, . . . . .	2	6
Breadth of forehead between orbits, . . . . .	8	9
Breadth of intermaxillary bones in front, . . . . .	3	9

(2.) NOTICE OF TWO ADDITIONAL CRANIA OF THE ANCIENT SHORT-HORNED Ox (*Bos longifrons*, Owen), FOUND SOME TIME AGO NEAR NEWSTEAD, ROXBURGHSHIRE; WITH NOTE OF THE SKULL OF A RECENT SHETLAND Ox. By JOHN ALEXANDER SMITH, M.D.<sup>1</sup>

In a previous communication to the Society (April, 1851), I exhibited and described four more or less perfect crania of this ox, the *Bos longifrons*, which were found during the formation of a cutting on the Hawick branch of the North British Railway, in the vale of Melrose, a little to the east of the village of Newstead. They were discovered in a series of deep well-like shafts, which contained various remains, with Roman pottery and a few coins.

Since that time I have been able to procure the two portions of skulls now before the Society, which, I believe, complete the collection of ancient animal remains that have been obtained from this place. The larger of the two skulls seems to have been an animal of rather greater size than any of those formerly described, measuring, as it does, about  $7\frac{1}{4}$  inches

<sup>1</sup> Read before the Royal Physical Society, Edinburgh, January 25th, 1854, and published in the "Edinburgh New Philosophical Journal," vol. lvii., 1854, p. 162.

across the forehead between the roots of the horn-cores; and the horn-cores themselves are also larger, being  $7\frac{1}{4}$  inches in circumference at the base. They are about  $5\frac{1}{4}$  inches in length, but the points being broken, we cannot of course determine this measurement correctly. This skull is also more prominent in the upper part of the forehead, and has the "prominent edge standing up along the middle of the forehead," which Professor Nilsson of Lund gives as a specific character of this ox, more distinctly marked than in any of the other specimens. The second skull belongs to a much smaller animal, being nearly equal in size to the least of those formerly described. The measurements here are:—Breadth across the forehead between the horn-cores,  $5\frac{1}{2}$  inches. The horn-cores are nearly  $3\frac{3}{4}$  inches in length, following the outer curvature; and their circumference at the base is 4 inches. In this individual also the prominence of the upper part of the forehead and of the occipital ridge is very distinct. These specimens are interesting, as showing somewhat of the range in the size and shape of this animal. We may suppose the smaller to be a cow, and the larger one a bull. But in all the varieties of size, there is a constant general resemblance in character.

Professor Nilsson has described as a distinct species of ox, a variety principally distinguished from the *Bos longifrons*, by having longer pedicles to the horns, the forehead more rounded in front, and the ridge of the occiput rising high in the centre, which he has called the *Bos frontosus*; but you will observe that in the crania on the table, there is a very considerable variety both in the prominence of the forehead and the outline of the occipital ridge.

In a letter with which I have been favoured by Professor Owen, he informs me that two of the specimens previously exhibited are the most perfect crania of the *Bos longifrons* which he has yet seen. And he considers that they tend to strengthen his opinion of this ox being a distinct species of fossil ox, all the varieties which it presents in the different specimens he has examined being within the limits of an admitted range; while he believes the *Bos frontosus* of Nilsson to be merely a variety of the *Bos longifrons*.

This is the most ancient of the small sized cattle, being found in the drifts and fresh-water deposits of the newer pliocene formation, along with remains of the huge animals of that time, the elephant and the

rhinoceros; and downwards through the deposits of the alluvium to the period of man, as the specimens on the table show, shortly after which it becomes lost as a species,—probably remaining in some of the domestic cattle as its later posterity, and as a small additional evidence on this point, I may mention that in one of the skulls previously described,<sup>1</sup> there still remained three of the molar teeth, being the two last molars of the upper jaw, and the third the last molar of the other side. These I have compared with the teeth of our domestic cattle, and found them to be almost identical in character, the arrangement of their enamel folds and general structure being the same (see woodcut).



Two last (2d and 3d), Maxillary Molars of right side of small Short-horned Ox, *Bos longifrons* (Owen). Found at Newstead, Roxburghshire. (See Plate, No. III.) (natural size).

I believe these skulls to be the first remains of the *Bos longifrons* which have been discovered in Scotland.

I may also mention, that in May 1853 there was presented to the Museum of the Society of Antiquaries of Scotland a portion of the lower jaw-bone of an ox, which had been found in a strange building, of several chambers, covered by a tumulus, and called a "Picts' House," situated on the western declivity of Wideford Hill, near Kirkwall, Orkney, which was opened and particularly examined by George Petrie, Esq. The specimen, which consists of a portion of the body of the jaw-bone, was lately examined by Professor Queckett of the Royal College of Surgeons, London, and was considered by him to belong to this same species of the *Bos*

<sup>1</sup> Vide Plate, No. III.

*longifrons*. It seems especially worthy of notice, as proving the existence of this small ox in the Orkney Islands, at a very early period, when the country in all probability was inhabited by some of the primitive races of our land; and is, so far as I am aware, the first instance of its existence being noticed so far to the north in Britain.

In conclusion, I may remark, that the occurrence of this Orkney specimen, should we believe it to be a domesticated ox, is also interesting, as it may be considered an additional evidence of the early inhabitants of this country having tamed an original native breed, it being by no means likely that in this comparatively remote place the domesticated ox could have been derived from the cattle, introduced it may be, into the southern parts of Britain by the Roman colonist.

*Note*.—Having, through the kindness of Professor Fleming, examined a skull of the Small-sized Ox of the Shetland Islands, I have added some of its measurements for comparison with the small oxen referred to here and in the previous communication. In this skull we have the prominent edge in the middle of the forehead rising from the depression between and rather above the orbits, and the rounded protuberance in the central part of the supra-occipital ridge. The horn-cores, however, are considerably longer and larger in proportion to the size of the skull, and curve backwards, outwards, and upwards.

*Measurements of Skull of Recent Shetland Ox.*

	In.	Lin.
Length of skull from supra-occipital ridge to front edge of intermaxillary bones, . . . . .	17	3
Length from supra-occipital ridge along centre of forehead to nasal bones, . . . . .	7	9
Length from roots of horn-cores to upper edge of orbits, . . . . .	3	10
Length of orbits, . . . . .	2	6
Breadth of orbits, . . . . .	2	3
Length from orbit to end of maxillary bone, . . . . .	7	8
Length from orbit to front edge of intermaxillary bone, . . . . .	9	6
Breadth of forehead between middle of roots of horn-cores, . . . . .	5	11
Breadth across narrowest part, . . . . .	5	7
Breadth of skull across middle of orbits, . . . . .	6	3
Breadth across front of intermaxillary bones, . . . . .	2	11



	In.	Lin.
Horn-cores, circumference of base, . . . . .	6	4
Horn-cores, length following outer curvature, . . . . .	6	6
Length of alveolar sockets of upper jaw, . . . . .	5	6
Height of skull from supra-occipital ridge to upper edge of foramen magnum, . . . . .	4	6
Height of skull from supra-occipital ridge to the base of the skull, . . . . .	6	0
Breadth of occipital condyles, posteriorly, . . . . .	3	10

In the "Statistical Account of Scotland," vol. i. Edinburgh, 1791, in the account of the parish of Delting, Shetland, it is stated that the carcase of a Shetland ox weighs from 3 to 4 cwts., that of a cow from 170 to 230 lbs.

I subjoin a few measurements of the skeleton of a young animal of *Bos longifrons*, to give an idea of the size of this species of ox, taken from Professor Nilsson's paper already referred to:—

#### "BOS LONGIFRONS.

*General Character.*—The forehead flattened, with a prominent edge standing up along the middle, and a smaller indenting backwards; the horns round, small, and directed outwardly upwards, and bent in one direction forwards.

"To judge from the skeleton, it was 5 feet 4 inches long from the nape to the end of the rump-bone, the head about 1 foot 4 inches, so that the whole length must have been about 6 feet 8 inches. From the slender make of its bones, its body must rather have resembled a deer than our common tame ox; its legs at the extremities are certainly somewhat shorter and also thinner than those of a crown deer (full-antlered stag). The skull is long and narrow, even more so than that of a deer.

"The rest of skeleton most like that of the tame ox, but each bone in proportion to the length is more slender and thin.

"*Atlas*: the breadth over the wings 4 inches 5 lines; under the length of the curve, 1 inch 3 lines; *axis* about 3 inches.

"*Shoulder Blade, Scapula*: length, 11 inches 4 lines; breadth, 6 inches 1 line; from cav.-glen. to spin., 1 inch 7 lines.

"*Humerus*: length, 8 inches 6 lines; breadth of lower joint's superficies, 2 inches 4 lines.

"*Radius*: about 10 inches in length.

"*Metacarpus*: length, 7 inches 3 lines; breadth of lower articular surface, 2 inches.

"*Pelvis*: length in a right line, 1 foot 2 inches 2 lines. *Foram. obturat.*, oval, in front somewhat narrower.

"*Femur*: length, 11 inches 4 lines.

"*Tibia*: length, 11 inches 4 lines.

"*Metatarsus*: length, 8 inches 4 lines. First toe joint, 2 inches; second, 1 inch 2 lines; the hoof, 2 inches 2 lines in length.

In the first paper on the *Bos longifrons*, I referred to an interesting specimen shown to me by the late Professor John Fleming, D.D., in the



Portions of Skull of small Short-Horned Ox (fig. 1), with Horns (figs. 2), found by Mr James Crawley 25 feet below the surface of his bog, near Castle Connell, county Limerick, Ireland, in June 1846, and given to Mr James Denniston of O'Brien Bridge, by whom it was presented to the Museum of the New College, Edinburgh, 1846.

Museum of the New College, Edinburgh, having both the horns, and also remains of part of the skin with the hair attached, apparently showing a

rough shaggy hide like our Highland kyloes. Professor Duns has kindly allowed me again to examine this skull. It shows distinctly the characters of the *Bos longifrons*. The upper part of the skull is separated at the orbits from the superior maxillæ, and the occipital bone is also separated. The whole bones are of a dark brown colour, and have lost almost entirely their mineral constituents, caused, as Professor Fleming was inclined to suppose, by their exposure in the bog to a spring of water surcharged with carbonic acid, which had apparently dissolved them away. The bones, having been soft, are now somewhat shrunk and split, but correspond closely to Professor Owen's description and figures of the *Bos longifrons*.

It measures 6 inches from the prominent centre of the supra-occipital ridge or top of the forehead, to the upper edge of the orbit, and between the roots of horn-cores  $6\frac{1}{4}$  inches. The occipital condyles measure  $3\frac{1}{2}$  inches across the back part. The horn-cores measure, the right nearly 6, and the left  $5\frac{3}{4}$  inches in greatest length, along their outer curvature; and in circumference at the base, 3 inches.

The horny sheaths—the horns—are of much interest; they are nearly black in colour, and taper rapidly towards a rather sharp-pointed extremity; the other end being probably expanded somewhat by its long steeping in the bog. They now measure, the right  $9\frac{1}{4}$ , and the left  $8\frac{3}{4}$  inches, along their greatest outer curvature; and in circumference at the base, the right horn  $7\frac{1}{4}$ , and the left 7 inches. When placed on the horn-cores, they slope outwardly slightly downwards, and forwards, rising above the plane of the forehead in front.

### (3.) NOTES OF THE OCCURRENCE OF THE REMAINS OF ANCIENT SHORT-HORNED CATTLE IN DIFFERENT DISTRICTS OF SCOTLAND.

#### ROXBURGHSHIRE.

*Newstead*.—Various specimens of *Bos longifrons* were found with Roman remains in 1846-7, near Newstead, of which I have given the preceding detailed accounts.

*Hawick*.—Sir Walter Elliot of Wolfelee informs me that the skull and different parts of the skeleton, he believes, of the *Bos longifrons*, Owen,

were found many years ago along with the bones of an elk (*Cervus alces*),<sup>1</sup> in the peat moss adjoining Williestruther's loch, near Wolfelee. The loch lies not far from the river Slitrig, in the parish of Hawick. The bones have now unfortunately all fallen aside.

#### KIRKCUDBRIGHTSHIRE.

(*Borgue, Borness*.—Since these notes were put together, some bones of the *Bos longifrons*, including a portion of the frontal bone with the characteristic small horn-core, were exhibited at a meeting of the Society in June 1873. They were some of the first-fruits of an exploration of a cave on the line of cliffs to the south-west of the bay of Kirkcudbright, on the farm of Borness, in the parish of Borgue. The cave is being carefully examined by Mr A. J. Corrie and Mr W. Bruce Clarke; and full details will be published when they have concluded their investigation. A short note of the commencement of this work is published in "Nature," for August 7, 1873; it is there stated that the bones included ox, red-deer, goat, horse, pig, pine-marten, rabbits, water-vole, &c., with remains of birds, frogs, and fish, and rude implements of bone, stone, &c.)

#### WIGTONSHIRE.

(*Dowalton Loch*.—A lake-dwelling or crannog in Dowalton loch was examined by Sir William Maxwell of Monreath, Bart., and various bronze vessels, &c., including a Roman patella, and numerous bones of animals, were presented to the Museum by Sir William in March 1865. These included two frontal bones with horn-cores; one a larger horn-core,  $6\frac{1}{2}$  inches in circumference at its base, and 3 inches long, its point being broken off. The smaller horn-core measures  $4\frac{1}{4}$  inches in circumference, and 3 inches long. Two portions of skulls, and also of lower jaws, all of a small-sized ox, the *Bos longifrons*.

#### EDINBURGHSHIRE.

(*Inveresk*.—Some remains of Roman pottery, amphoræ, mortaria, &c., along with bones of animals, deer and oxen, found at Inveresk, near Musselburgh, were presented to the Museum by Admiral Sir Alexander

<sup>1</sup> See Notice of Remains of Elk found in Scotland, "Proc. Soc. Antiq. Scot." vol. ix. p. 326.



Milne, K.C.B., in May 1865. The bones of the oxen may probably be referred to the *Bos longifrons* of the Roman period.

*Kinleith*.<sup>1</sup>—A curious double-bladed and edged bronze implement, of a unique character ( $3\frac{3}{4}$  in. long), was found at a depth of nearly 11 feet from the surface, in an undisturbed bed of gravel, along with some of the bones of a small-sized ox, and the radius from the right fore-leg of a moderate-sized dog, in the valley of the Water of Leith, at Kinleith, not far from the village of Currie. The gravel-bed was overlaid by beds of sand and clay and the ordinary vegetable mould, and was nearly 300 feet distant from the present bed of the stream. The bones of the ox consisted of part of the left hip-joint or acetabulum, with a portion of the pubic bone attached, lower portions of the tibia or leg-bone, and the cannon or metatarsal bone of the same side; also the condyles or lower part of the femur or thigh-bone of the right. From the small size of these bones, they may be supposed to belong to the *Bos longifrons*. They were presented by me to the Museum of the Society in 1863.

*Edinburgh, North Loch*.—James M'Bain, M.D., R.N., &c., informs me that he has in his possession portions of three specimens of the *Bos longifrons*, which were discovered in 1870 when excavating for the foundations of the Waverley Station of the North British Railway, in the valley extending from the north of the Castle Rock between the Old and New Towns of Edinburgh, the site formerly of the Nor' Loch. The bones consisted: one, of part of the frontal bone, with the left horn-core, outer curvature measuring  $4\frac{1}{2}$  inches, and its circumference at the base 5 inches; another specimen included the whole upper part of the frontal bone, with both horn-cores attached; the horn-cores each measured 4 inches along their outer curvature, and 4 inches in circumference round the base of the horns; it measured also 4 inches across the forehead, between the roots of the horn-cores. The last specimen was also part of the frontal bone, with the right horn-core attached; it measured along its outer curvature  $4\frac{1}{2}$  inches, and its circumference at the base 5 inches. The bones were found along with abundant masses of lacustrine shells,

<sup>1</sup> See Remarks on a Bronze Instrument found with bones of ox and dog in a bed of river gravel, &c., "Proc. Soc. Ant. Scot." vol. v. p. 84.

*Planorbis*, *Lymneus*, &c., the greater portion unbroken, thus showing the character of the formation, as the bottom of the old loch. The age of these remains is of course very uncertain. The bones were presented to Dr M'Bain by Alexander Christie, Esq., by whom they were discovered and preserved.

*Inchkeith*.—In the account of a kitchen midden of uncertain age, discovered on the island of Inchkeith, in the Firth of Forth, in 1872, by David Grieve, Esq., F.S.A. Scot., and published in the Proceedings of the Society, he describes various animal remains, including those of small-sized cattle. There were also found the remains of the grey seal, *Halichærus grypus*.

#### HADDINGTONSHIRE.

*Seacliff*.—In April 1870, a paper was read before the Society by J. W. Laidlay, of Seacliff, Esq.,<sup>1</sup> giving details of an ancient structure built of dry stone walls, and a kitchen midden: discovered on an isolated rock, known as the "Ghegan," on the sea-shore near Seacliff. The lower part of the building is about 22 or 23 feet above high-water mark, and among the remains of ancient occupation some pins of different sizes, needles, and ornamental combs of bone, were found; a few fragments of coarse pottery, a quern, &c., and various animal remains; besides a few human bones,—“of oxen a great abundance, and consisting of several varieties, the *Bos longifrons* including a right metacarpal bone (named apparently by Prof. Owen), and others; sheep also, in very great abundance, and of a small size; goats, a few; horses, pretty numerous, of a small size; hogs, a few; deer, the red-deer, the roe; dogs, several, of a large size; rodents, the water vole, &c.; birds and fishes, a very few; besides the remains of rabbits, rats, &c., of which, as they might find their way naturally to the deposit, no account need be taken.”—P. 374.

On mentioning the somewhat Celtic-like name of "Ghegan" to the Rev. Thomas M'Lauchlan, LL.D., F.S.A. Scot., our well-known Celtic scholar, he told me, it might be explained as Gaelic—"Geogan," the "little bay, or the little thing or rock at the bay," which seemed to be descriptive of the locality; the Saxon *goe*, which is synonymous with the Celtic *geo*

<sup>1</sup> Proc. Soc. Antiq. Scot. vol. viii. p. 372.

or *geotha*,—an inlet, is, however, also a possible root: or the old Icelandic *Gja*; but the *an* is a true Celtic termination.

*Drem, Balgone*.—Some bones of the *Bos longifrons*, found 15 feet under a peat moss at Balgone, were presented to the Museum of Science and Art, Edinburgh, by Sir G. Grant Suttie, Bart. These consist of the broken upper portion of a small skull with horn-cores, lower jaw, femur, &c. They measure,—

	In.	Lin.
<i>Horn-cores</i> :—		
Right, length along greater curvature, . . . .	3	4
Circumference of base, . . . .	3	9
Left, length nearly, . . . .	3	0
Circumference of base, . . . .	3	9
<i>Lower jaw</i> , portion of body of left side with two molar teeth,		
depth behind last molar, . . . .	2	9
<i>Femur</i> , greatest length, . . . .	9	9
Length between articular surfaces, . . . .	8	9
Breadth across lower articulation, . . . .	2	6
<i>Sacrum</i> , length inside, . . . .	8	4

## LINLITHGOWSHIRE.

*Kinneil*.—A skull and part of the pelvis of a short-horned ox, found in a moss at Kinneil, were presented to the Museum of the Society by Dr Walter Adam in 1849. The skull is tolerably perfect, the anterior part of the superior maxillaries being broken away. It has two short horn-cores, and there is also a rounded broken aperture in the front of the forehead. It measures in,—

Length from the middle of occipital ridge to transverse		
nasal suture, . . . .	8	$\frac{3}{4}$ inches.
Do. to upper part of orbits, . . . .	7	$\frac{3}{4}$ „
Horn-cores, in length, right, . . . .	3	„
Do. do. <i>sc</i> left, . . . .	4	„
Do. circumference at base, . . . .	6	„
Orbits, length, . . . .	2	$\frac{1}{2}$ „
Do. breadth, . . . .	2	$\frac{3}{8}$ „
Length of alveolar sockets, . . . .	4	$\frac{3}{4}$ „

The innominate bones of the pelvis measure 1 ft. 3 in. in greatest length; 1 ft. 4 in. greatest breadth above, and  $9\frac{1}{2}$  inches across the front of pelvis at upper part of acetabula. These bones are of much interest, from the locality where they were found. In some notes which were published in vol. viii. of the Proceedings of the Society, describing the large Roman sculptured stone<sup>1</sup> got at Grange, near Borrowstounness, in the immediate neighbourhood of Kinneil, I called attention to the fact that Kinneil meant in Gaelic the "Head of the Wall," and it was in this neighbourhood, probably near where the sculptured stone was found, that the Roman wall between the Forth and Clyde terminated. The skull, therefore, was found in a locality anciently occupied by the Romans.

#### LANARKSHIRE.

*Glasgow.*—In a paper published in the "Transactions of the Geological Society of Glasgow," vol. ii. p. 152, 1867, "On the Occurrence of *Bos longifrons* and *Bos primigenius* in the Ancient Drift of the Clyde," read to the Society on 12th April 1866 by Mr James Bennie, of H.M. Geological Survey, to which my attention was called by Mr John Young of the Hunterian Museum, Glasgow. Mr Bennie states that "part of the forehead of a small ox, which Dr Scouler has recognised as of the *Bos longifrons*, one of the extinct cattle of Clydesdale," was found "in true river drift at Rutherglen loan, Gorbals." The horn, which I have had an opportunity of examining, measures  $5\frac{1}{4}$  inches across the forehead between the roots of the horn-cores. The small horn-cores are each broken, the right measuring  $4\frac{1}{2}$  inches in circumference at the root, and the left the same, and 2 inches in length to its fractured extremity. The excavation was for a sewer extending several hundred yards. It was seven or eight feet deep, and was clearly and unmistakeably thorough river sand and gravel, characterised throughout by the same kind of vegetable remains which mark the Clyde drift so emphatically elsewhere. The forehead of the ox had been dug out of a bed of fine grey sand, from a depth probably of about seven feet, and it had every appearance of having lain long in water before it had been silted up. Mr Bennie considered that this skull belonged probably to what he called the canoe

<sup>1</sup> Proc. Soc. Ant. Scot. vol. viii. p. 112, 1869.



period of the Clyde, more especially as there were two small oval holes nearly together, just behind the occipital ridge, which he considered had been made by the hand and tools of man. He found in the same bed a small perforated stone, 1 inch long, which he considered had also been manufactured by man.

## STIRLINGSHIRE.

*Blair-Drummond*.—In the course of the extensive operations used many years ago for draining the peat-moss at Blair-Drummond, near Stirling, various relics of early antiquity were discovered; stone celts, hammers, arrow-heads, &c. The remains of various small short-horned cattle were also found; and the horny sheaths or horns of apparently three different specimens of these cattle were exhibited to the Society by G. Home Drummond, Esq.

The largest of these—a horn of the right side of the head—measures  $11\frac{3}{4}$  inches in greatest length along its larger and outer curvature, and  $6\frac{1}{4}$  inches in circumference about the middle of its length, or rather a little nearer the point, where the horn remains perfect. A label, apparently belonging to this horn, states that it was found about 1816, a few inches under the surface of the clay, below the moss in Kirklane, in John Ferguson's land, and is initialed H. H. D. by the late Henry Home Drummond, of Blair-Drummond, Esq.

The next, also a right horn, measures  $10\frac{1}{4}$  inches in length along its outer curvature, and  $5\frac{1}{2}$  inches in circumference at about half its length, where the horn begins to be more perfect. It is labelled as having been found near the bottom of the Chalonerston Moss, in May 1861. The smallest, a horn of the left side of the head, measures only  $6\frac{3}{4}$  inches in length along its outer curvature, and  $4\frac{1}{2}$  inches in circumference about the middle of the horn, where it is perfect. These horns are dark-coloured or black; they curve from the root gently outwards and rather upwards, then slightly downwards and forwards towards the tip, which again, as in the first horn, rises slightly upwards. The horn (No. 2), has the tip curved rather more inwards than the others, like that of the modern "short-horned" cattle. The horns are much split into layers near the roots, and all taper rather rapidly to a small and somewhat fine and sharp-pointed extremity.

## KINCARDINESHIRE.

*St Cyrus—Lower Warburton.*—At a meeting of the Royal Physical Society of Edinburgh on the 28th March 1866, a communication was read from Dr J. C. Howden, Montrose, "On a Bone Cave at Lower Warburton, Kincardineshire," which is published in their Proceedings (Edinburgh, vol. iii.) Dr Howden states that the cave was discovered in 1847, in a range of trap cliffs on the farm of Lower Warburton, in the parish of St Cyrus. It is situated about half a mile from the estuary of the North Esk, and fifteen feet above high-water mark. A short account of it was published by the late Mr Alexander Bryson in the "Edinburgh New Philosophical Journal" for 1850. The late Mr William Beattie, Montrose, also read a notice of this cave before the British Association, at its meeting in Aberdeen in 1859. The entrance of the cave, which was about 12 feet wide by about 5 feet high, faces the south, and its cavity, consisting of two chambers, widened to about 20 feet broad, with a varying height of 20 or 30 feet. It was filled with a loamy soil, portions of stalagmite being found in it, and a great quantity of organic remains. These consisted of an extraordinary abundance of the shells of recent edible mollusca from the sea-shore, *Buccinum*, *Mytilus*, *Cardium*, *Patella*, &c, along with the bones of various animals *Cervus elaphus* and *capreolus*, *Bos* —, *Sus*, *Erinaceus europæus*, *Felis catus*, *Canis familiaris*, *vulpes*, *Hypudius* or Vole, *Mus*, &c, and bird bones of the *Sula bassana*, in considerable quantity, all these bones were chiefly broken into small fragments, the shafts being split open. A portion of a human parietal bone and radius were also found.

Some portions of coarse pottery ornamented outside with a small cord-like pattern, were also noticed, one of these vessels, charred inside, had been about 10 inches in diameter; another, not charred, had measured about 7 inches. Dr Howden has sent me drawings of some of the bones collected, and I find the remains of the ox had apparently belonged to the *Bos longifrons*, one of the horn-cores measuring about  $6\frac{1}{2}$  inches in length along its outer curvature, and  $5\frac{1}{4}$  inches in circumference at its base, and another about  $5\frac{1}{2}$  inches in length, and  $4\frac{3}{4}$  inches in circumference.

Dr Howden is inclined to consider the contents of this cave as corresponding to the kitchen-middens of the Danish antiquaries, and supposes

it had been occupied as a place of human habitation, but that there was no evidence of its probable age. Few caves have been as yet explored in Scotland; much interest is therefore attached to any such account, and it would have been of great importance had the whole contents of the cave been carefully examined. Captain Fitzmaurice Scott, the proprietor, on William Beattie's recommendation, commenced the exploration, but unfortunately part of the roof fell in, a mass of rock of many tons weight, and precluded further research. This is much to be regretted, and its interest would have been increased by the fact, that a race of wandering cave-dwellers or gipsies still exist along some parts of our rocky north-eastern coasts of Scotland.

## FORFARSHIRE.

*Cupar-Angus*.—Stewart T. M. Hood, Esq., in April 1863, presented to the Museum some bones and teeth of a small-sized ox, apparently the *Bos longifrons*, which were found in an underground building, or "Picts' House," along with portions of rusty iron, and two small pieces of red embossed Samian ware, suggesting the probability of its being of contemporaneous age with the Roman occupation of Britain.

## ROSS-SHIRE.

*Tain*.—When some draining operations were going on in the *Morbhaich Mor*, or great grazing, a flat sandy tract on the south shore of the Dornoch Firth, near the town of Tain, various bones—the lower jaw of a dog, a tine of a rein-deer,<sup>1</sup> and some bones of a small ox—were found in a peat moss in 1866 by the Rev. J. M. Joass, and were all presented to the Museum of the Society. Of these, deeply dyed by the peat, one was the frontal portion of the skull, with the characteristic small horn-core of left side, measuring 4 inches in circumference at the base, the horn being broken towards the point; with other bones of the ancient small ox, the *Bos longifrons*.

## SUTHERLANDSHIRE.

*Cill Trölla*.—In the Broch of Cill Trölla,<sup>2</sup> examined by the Rev. J. M.

<sup>1</sup> See "On Remains of Reindeer found in Scotland," Proc., vol. viii. p. 186.

<sup>2</sup> Archæologia Scotica, vol. v.; Account of "The Brochs of Cill Trölla," &c.

Joass of Golspie, numerous early implements of stone and bone were found; and the remains of various animals,—red deer, rein-deer, horse, pig, whale, and cattle were found; among the remains of the cattle is the horn-core of a small ox, apparently the *Bos longifrons*. This horn-core measures about 4 inches in length.

#### CAITHNESS.

*Kettleburn*.—A. Henry Rhind, of Sibster, Esq., presented to the Museum of the Society, April 1854, a collection of various archæological relics and osteological remains found in the ruins of a broch or so-called Pictish Tower opened by him at Kettleburn, near Wick. The bones were examined by Mr Queckett of London, and give an interesting glimpse of the early fauna of Caithness. Mr Queckett's notes were published in the "Archæological Journal," London, vol. x. p. 223. The bones include those of deer, roebuck, horse, ox, sheep of small size, goats, pigs, seal, whale, &c. Among those in the Museum is a portion of the skull of *Bos longifrons*, with horn-core of left side, 5 inches long and 6 inches in circumference at the base, and a portion of a lower jaw, Mr Rhind says,—“showing the existence of this extinct species of ox when these dwellings were inhabited.”

*Keiss*.—Samuel Laing, Esq., M.P., presented to the Museum, in January 1867, a large collection of stone, bone, and bronze implements, along with portions of human skeletons and animal remains found at Keiss. They are fully described in the "Prehistoric Remains of Caithness," published by him, London, 1866. Numerous remains of the *Bos longifrons* were found. In a paper on the "Age of the Brochs and some other Prehistoric Remains of Orkney and Caithness," by Mr Laing, read at the meeting in January 1867, and published in vol. vii. of the Proceedings of the Society, he states at page 67, where he gives details of the fauna and food of the inhabitants of these Brochs, that he considers it was similar to that of the dwellers at Keiss. He mentions, besides the red deer, horse, pig, goat, or sheep, the dog, fox, whales, and birds, including the now apparently extinct *Alca impennis* or great auk, fish, &c., and—"the ox, always the short-horned species, apparently *Bos longifrons*."—P. 67. To which I have since added the rein-deer.



*Thrumster Little*.—Mr John Bremner, jun., in June 1870, presented to the Museum a horn-core, 3 inches long and  $4\frac{3}{4}$  in circumference at the base, from the left side of the skull of the *Bos longifrons*. It was found, along with an antler of red deer partially cut through with a hatchet, and showing also marks of a saw; in a Broch at Thrumster Little.

*Yarhouse*.—In the Broch of Yarhouse some remains of animals were discovered by Mr Joseph Anderson, and were presented by him to the Museum. These include a portion of the frontal bone, with the left horn-core of the *Bos longifrons*, the point broken, and measuring 5 inches in circumference at the base of the horn; and also a horn of the reindeer.<sup>1</sup>

#### ORKNEY.

*Mainland, Kirkwall*.—In my second notice of the *Bos longifrons*, I have referred to the lower jaw of an ox, defined by Prof. Queckett of London as the *Bos longifrons*, being found by George Petrie, Esq., Cor. Mem. S.A.Scot., Kirkwall, in a "Picts' House" on Wideford Hill, near Kirkwall, in 1849. It was presented by Mr Petrie to the Museum in May 1853, and is a portion of the body of the right side of the lower jaw. Four molar teeth still remain in their sockets.

*Mainland, Bay of Skaill, Skara*.—The upper part of skull with right horn-core of a small ox was found among the animal remains at the underground building at Skara. The horn-core measured 7 inches in length, and 7 inches in circumference at its base. It seemed allied at least to the *Bos longifrons*. A humerus 10 inches long was also presented to the Museum.

*(North Ronaldshay, Burrian)*.—Numerous stone and bone implements and the remains of various animals found in the ruins of the Broch of Burrian, North Ronaldshay, were recently presented to the Museum of the Society by Dr William Traill. Among these remains there are two of an ox resembling the *Bos longifrons*; one has part of the frontal bone, with the horn-core of the right side; it measures 4 inches in length,

<sup>1</sup> See "On Remains of Reindeer in Scotland," Proc. vol. viii. p. 186.

and  $7\frac{1}{2}$  inches in circumference at the base. The other has a broken horn-core, 3 inches long, and is  $8\frac{1}{2}$  inches in circumference at its base. Among the numerous bones of cattle two phalangeal bones were found, apparently of this same small ox, having cut on one of them two of the so-called symbols of the "Sculptured Stones of Scotland;" the other had apparently been spoiled in the execution of the pattern of another figure or symbol.)

#### HEBRIDES.

*Island of Harris.*—In February 1860 Dr James M'Bain, R.N., read a paper before the Royal Physical Society<sup>1</sup> here "On Various Osteological Remains found in a Pict's House or Ancient Underground Building at Nisibost in Harris," by Captain Thomas of H.M. surveying ship "Woodlark." The remains included bones of the dog, common seal, the red deer, a small-sized sheep, and horse, also of small size, and of the *Bos longifrons*, or small short-horned ox, a horn-core measuring  $3\frac{1}{2}$  inches along its outer curvature, and  $3\frac{3}{4}$  inches in circumference round its base; teeth, bones, &c. Captain Thomas, R.N., Cor. Mem. S.A. Scot., described the peculiar ancient structure in which these remains were found in an important memoir "On the Primitive Dwellings of the Outer Hebrides," published in the Proceedings of the Society, vol. vii. 1867, p. 153.<sup>1</sup>

#### THE AGE OR GEOLOGICAL RANGE OF THE SMALL SHORT-HORNED OX, *Bos Longifrons*, IN BRITAIN, AND ESPECIALLY IN SCOTLAND.

In England the remains of this ox has been found in alluvial beds and peat bogs. They are associated also with early traces of human existence, as well as in the tombs or barrows of the early inhabitants, as described by Dr John Thurnam, of Wiltshire; and especially with remains of the Roman occupation. In Ireland these small cattle have been found in the peat mosses in numerous instances, and in various localities, and also associated with the early traces of man's occupation in different districts of the country.

Professor Richard Owen, in his well-known "British Fossil Mammals,"

<sup>1</sup> Proc. Roy. Phys. Soc. Edin., vol. ii.

London, 1847, from which I have so often quoted, tells us, that among the various remains of this animal, the *Bos longifrons*, examined by him, there were some from the peat bogs, others from the sub-turbary marls of Ireland; and there were also other specimens which had been obtained along with the remains of various extinct mammalia, such as the *Elephas* and the *Rhinoceros*, from different fresh-water deposits of England. Professor Owen therefore concluded, as I have already stated in my first paper, that the geological age of this small short-horned ox apparently extended from the times of the early inhabitants of the country, backwards through the bogs and marls of the alluvium, to the caves, and the drifts, and fresh-water deposits of the Newer Pliocene Period.

In an interesting memoir "On the Prehistoric Mammalia of Great Britain," by W. S. Boyd Dawkins, M.A., &c., published in the "Transactions of the International Congress of Prehistoric Archaeology at Norwich," London, 1868, Mr Dawkins states that he had examined carefully many of the localities where the fossil remains of various animals had been found; and he tells us that in the localities of Clacton and Walton in Essex, from which Professor Owen got sent to him the bones of the *Bos longifrons*, associated with those of the *Elephas* and the *Rhinoceros*; he found the beds containing these ancient fossil mammals, and over them other and newer alluvial beds, which contained the remains of more recent animals, as the goat, &c. Both these sets of beds were exposed to the wear and tear of the sea, and he therefore considers the association of the bones of the *Bos longifrons* and the older fossil mammalia, the elephants, &c., was due merely to the accidental aggregation of them on the shingle of the sea-shore. Other recorded instances of the association of the *Bos longifrons* with the older fossil mammals may, he thinks, be explained by a similar accidental aggregation of the bones of animals belonging really to very different geological periods. Or, in other cases, from the bones of the *Bos longifrons* being mistaken for those of the *Bison minor* of Owen, which he believes to have been associated with the older fossil extinct mammalia. Mr Dawkins comes thus to the conclusion that this short-horned ox is not older geologically than what he terms the "Prehistoric Period," when it makes its appearance along with the goat and the dog. This period he thinks it necessary to separate from

the Post-Glacial Period, and defines as the interval between the British Post-Glacial Period and the dawn of history.

The various instances of the existence of this short-horned ox in Scotland, which I have been able to collect, add little to its geological history; my notes have, however, been principally taken from the results of archaeological inquiries, and they show the relation of this small ox to man, rather than its general history in the country. In so far as my notes enable me to go, I find this small-sized ox associated apparently with our early races of men, probably as a domesticated animal, as shown by its remains in his kitchen middens and the ruins of his ancient dwellings, his underground and "Picts' Houses," and his "Brochs," &c., as well as with the traces of the Roman occupation of the south of Scotland. Older than these, it may be, I find its remains, as far as I have been able to discover, in the caves, the peat bogs, the lacustrine formations and the river drifts and gravels throughout the country. From the entire absence, however, of the remains of the larger extinct mammalia, as the elephant and the rhinoceros, &c., from at least our river drifts and gravels, it is not easy to contrast the age of our Scottish gravel-beds with those of England. The very few remains of the elephant as yet discovered in Scotland have been found apparently only in the boulder clay, intercalated with it or underneath it. At the time these animals lived in England, Scotland is believed, by some geologists, to have been either in a great measure submerged, covered with water, or to have had its lands deeply overlaid with an extensive covering of snow and ice.

Strange to say, a horn of a rhinoceros was "found in one of the marl-pits at the Loch of Forfar." From the interest attached to this old discovery, which has apparently never had given to it the importance it deserved, I may be excused a slight digression. It was exhibited by Professor Jameson to the Wernerian Society on the 25th January 1823, and was presented to the Museum of the University. The donation of a "Rhinoceros horn, found in the Loch of Forfar, by Mr Stephens," is included in the MS. "Catalogue of Donations to the College Museum in 1822-23." The next donation is that of an "*Anas fuligula*," also by Mr Stephens, and we find by a subsequent donation of another Scottish bird the "*Anas tadorna*," recorded as being made by "Mr Stephens of Dundee;" that the residence of the donor of the rhinoceros horn was at Dundee, the largest and most im-



portant town of the county of Forfar. In the MS. Minute-book of the Wernerian Society for 25th January 1823, it is recorded of Professor Jameson—"He then exhibited the horn of a rhinoceros, found in one of the marl-pits of the Loch of Forfar, and stated reasons for believing it to have belonged to one of the Rhinoceri which formerly inhabited this island." Professor John Fleming, D.D., refers to this same horn in his "Remarks illustrative of the Influence of Society on the Distribution of British Animals," published in the "Edinburgh Philosophical Journal," vol. xi. 1824, and states that—"A specimen of the horn of the fossil rhinoceros, found in one of the marl-pits at the Loch of Forfar (Wern. Mem. vol. iv. p. 582) exists at present in the Edinburgh Museum, and we have been informed by Professor Jameson that two other examples have occurred in Blair-Drummond Moss on the banks of the Forth. It is to be hoped that the skulls will yet be procured."—(P. 297.) I cannot find anything to show that Professor Jameson<sup>1</sup> ever personally examined these last supposed horns of the rhinoceros found in Blair-Drummond Moss, and as several horns of cattle were found, some of which I have referred to and described in my Notes, it is perhaps not impossible these macerated and partially split horny sheaths—the horns of the ox—may have been mistaken by the describer for those of the rhinoceros. I cannot, however, think the same objection can be justly made to the horn, so carefully examined and preserved, which was found at the Loch of Forfar. The only other instances of the discovery of the horns of an extinct rhinoceros known to me are the two referred to by Professor Owen ("British Fossil Mammals," p. 353), found with their frozen carcasses in Siberia—one mentioned by Pallas in his "Voyages dans L'Asie Septentrionale," 1793—the other now preserved in the Museum of Natural History at Moscow. The latter, probably the first or nasal horn of the *R. tichorinus* of Cuvier, measures 3 feet in length. From the small size of the Scottish specimen, it may be supposed to have been possibly the second or smaller horn of a young woolly rhinoceros, *R. tichorinus*, Cuv., if it did not belong to a smaller and more slender species altogether. I have been trying to trace out this specimen (a note of which I may at some other time lay before the Society), and am inclined to believe that it still exists as a small pointed and much weathered horn in the Museum of Science

<sup>1</sup> See Mem. Wern. Soc. vol. v. p. 573 (5th Feb. 1825.)

and Art. It measures about 7 inches in height along the front slope of the horn, and about  $5\frac{1}{4}$  inches in the longest diameter of its oval base.

Then when you try to understand the arrangement of other river drifts and gravels, as, for example, the celebrated beds at Amiens, &c., in France, you find one set of geologists mapping them all out, into gravel of the recent period with remains of recent animals and its so-called "neolithic weapons," covered with loam of the same age; then lower level valley-gravel, with the remains of extinct mammalia, its "paleolithic weapons," and its covering loam; next, higher level valley-gravel, with contents similar to the last, and also with its loam of the same age; and lastly, upland gravel, of various kinds and periods. These different river gravels, with their recent and extinct mammalia and their neolithic and paleolithic weapons, are also found in England. Another and later observer, however, goes over to make a careful examination of these same river gravels in France. I refer to A. Tylor, Esq., F.L.S., F.G.S., who has published a careful and elaborate memoir "On the Amiens Gravel" in the *Journal of the Geological Society of London*, vol. xxiv. 1868; and one of the conclusions he has arrived at is—"That the whole of the Amiens valley gravel is of one formation, of similar mineral character, contains nearly similar organic remains, and belongs to a date not much antecedent to the historical period." So that I fear the whole subject of the age and arrangement of these river gravels would seem still to be an open and undecided question, and I am by no means astonished at this conclusion; when I remember the astounding changes caused by a few days rain, flooding the Highland valleys of the Spey, the Findhorn, and other neighbouring streams, so graphically described by Sir Thomas Dick Lauder, Bart., in his "Account of the Great Floods of August 1829, in the Province of Moray, and adjoining districts," Edinburgh 1830; new editions of which have been quite recently published. As yet, however, I have not been able to collect any data which appear to show the presence of this small-sized ox in any of the earlier geologic formations of Scotland.

The Roman occupation of Britain began in the first century of the Christian era, and it was in the beginning of the fifth that a Roman legion last visited Scotland, attempting to restore with the sword their dominion over the south of Scotland. It is to the earlier years of Roman

rule that I have been inclined to date the principal occupation of their station of Trimontium, near Newstead in Roxburghshire, at the base of the triple Eildon.<sup>1</sup> Then as to the age of the circular stone towers or brochs of the north of Scotland, with all their numerous rude bone and stone implements, &c., Mr Joseph Anderson has shown, and I think with great probability, that their existence may be dated from about the fifth or sixth down even to the eighth or ninth centuries.<sup>2</sup> The presence of the remains of this small short-horned ox in many of the sites referred to, in different parts of the country, thus brings its existence apparently quite down to historic times, when it becomes lost at last among the varying groups and breeds of our ordinary domestic cattle.

Mr Youatt, from whose valuable work "On Cattle" I have already quoted, tells us,—“The slightest observation will convince us that the cattle of Devonshire, Sussex, Wales, and Scotland are all essentially the same.” The original type in these various localities was apparently a small, active, somewhat short-horned animal, very different indeed from the fine, soft-skinned, carefully bred kind of cattle, now known by the designation of a “short-horn,” but probably a rather small-sized, rough, shaggy-haired, hardy animal, still represented, it may be, in some of these characters by its probable descendants, the Welsh and Highland, and probably also the Orkney and Shetland cattle; as well as the ancient white cattle preserved at Hamilton Palace or Cadzow Park, and in the park of Chillingham Castle. This original type, however, has been since much changed, and adapted by careful selection and breeding, to the taste and fancied standard of excellence of each particular district of the country.

I am indebted to our treasurer, David Douglas, Esq., F.S.A. Scot., for the accompanying sketch of our improved kyloe or Highland cattle by the talented artist, Gourlay Steele, R.S.A. It is taken from the very spirited and amusing “Sketches of Highland Character,” one of the series

<sup>1</sup> Roman Antiquities found at Newstead, Roxburghshire. *Proc. Soc. Antiq. Scot.*, vol. i. p. 28, 1855; and *Archæologia Scotica*, vol. iv. p. 422.

<sup>2</sup> Notice of the Broch of Yarhouse, &c., with remarks on the Period of the Brochs, &c., *Proc.*, vol. ix. p. 292, 1871; and *Archæol. Scot.*, vol. v.

of "Odds and Ends," lately issued by Messrs Edmonston and Douglas, publishers, Edinburgh.



DISTRIBUTION OR RANGE OF THE SMALL SHORT-HORNED OX, *Bos Longifrons*, IN BRITAIN, AND ESPECIALLY IN SCOTLAND.

Professor Nilsson tells us of the *Bos longifrons* that—

"Their remains have been found in turf bogs, and in the south of Scania it lived contemporaneously with the *Rein-deer* and *Bos primigenius*. With us, and as far as we know, over all Europe, they were, as wild, exterminated before the so-called Historic period."

In the list of the animal remains from "The Swiss Lake Dwellings," given in Dr Keller's work, translated by Mr J. E. Lee, Professor Ruti-



meyer states that this small ox, to which he refers under its synonyme of *Bos brachyceros*, occurs at Robenhauser, one of the earlier sites with its bone and stone implements; and indeed everywhere. He refers also to the *Bos frontosus*, Nilsson (which Professor Owen considers, as I have mentioned, to be merely a variety of the same species), as occurring at Bienne. Professor Rutimeyer, however, also adds to his list two or three additional named species, or rather, perhaps, domesticated varieties of the *Bos taurus*, the *Bos taurus trochoceros*, and *Bos taurus domesticus*; as well as the *Bos taurus primigenius*, referred by him to the large-sized cattle which I shall afterwards describe.

In England and Ireland the osseous remains of the small-sized ox, the *Bos longifrons*, have been found in many places over the country.

In Scotland, as I have attempted to show, this small-sized short-horned ox at a comparatively early period existed over the whole length and breadth of the land, from the south to the extreme north of the country, and even to the Orkney Islands beyond, as well as apparently to the Hebrides on the western coasts of Scotland.

## II. THE GREAT FOSSIL LONG-HORNED OX, THE URUS, *BOS PRIMIGENIUS*, BOJANUS AND OWEN.

As in the description of the small short-horned ox, I shall first quote my former paper, describing the skulls of the great fossil ox in the Museum of the Society, and shall supplement it with additional examples found in different parts of Scotland; adding also some remarks on their Geological age and Distribution over the country.

### (1.) NOTES ON THE CRANIA OF THE URUS (*Bos primigenius*) IN THE MUSEUM OF THE SOCIETY OF ANTIQUARIES OF SCOTLAND. By JOHN ALEXANDER SMITH, M.D.<sup>1</sup>

Some years ago, when gathering up various details in reference to the ancient small short-horned cattle of this country, my attention was

<sup>1</sup> Read before the Royal Physical Society, 27th April 1859, and published in their Proceedings, vol. ii. p. 111.)

also directed to the large cattle (*Bos primigenius*), and to the specimens of crania in the Museum of the Society of Antiquaries. I took various measurements of these crania, and searched the early records of the Society for such information in regard to the places where they were found, and any other details that might be of interest; and as Mr Turner has favoured us this session with some details of the specimens of this great ox in the Anatomical Museum of the University, I have thought it might interest the members if I produced my old notes on the subject.

There are three specimens of these crania of the *Bos primigenius* in the Museum of the Society; they are included in the list of the "Fossil Skulls," &c., in the printed catalogue of the Museum; and the following table gives some of their measurements:—

	1.	2.	3.
	Ft. In.	Ft. In.	Ft. In.
Length of skull from supra-occipital ridge to front of intermaxillary bones, . . . . . }	{ Intermaxillary bone wanting. }	...	2 4
Length from do. to upper part of nasal bones, . . . . . }	1 1½	1 1	1 2½
Length from middle of supra-occipital ridge to upper part of orbit, . . }	1 1	1 0	1 0
Length of orbit, . . . . . }	0 3	0 3	0 3
Breadth of do. . . . . }	0 3	0 2¾	0 3
Breadth of skull between roots of horn-cores, . . . . . }	0 10	0 10	0 10½
Breadth across middle of orbits, . . . . . }	0 11½	0 11	0 11
Horn-cores—circumference of at base, . . . . . }	1 2½	1 3½	1 0½
Length, following outer curvature, . . . . . }	2 4½	2 5	1 10½
span of horn-cores from tip to tip, . . . . . }	2 7½	2 10½	2 2½
across greatest width of horn-cores, . . . . . }	3 1½	3 2	2 7
Length of alveolar sockets for teeth, . . . . . }	...	0 7	0 6
Breadth across occipital condyles, . . . . . }	...	0 6	0 5

The cranium No. 1 was the one first presented to the Museum of the Society, by the Rev. Thomas Robertson, minister of Selkirk, in 1781. The donation was made through a Mr Cairncross, and the following letter accompanying it is preserved in the library of the Society:—

*To Mr George Cairncross, Writer, Parliament Close, Edinburgh,  
(with an ox's skull and flints).<sup>1</sup>*

“SELKIRK, July 14th, 1781.

“DEAR SIR,—Among other curiosities dug out of a marle moss at Whitmuirhall in this parish, the skull and flints of an ox which I have sent you attracted my attention. You, I know, are fond of anything that tends to throw light upon the ancient state of this country, and therefore I used the freedom to transmit this, not merely on account of its uncommon size, but as a proof of the large breed of cattle with which this country abounded in the last century. I found five skulls, evidently larger, but not so entire. I found also several small axes, resembling those used by coppersmiths, but did not think it worth while to trouble you with them. If anything deserving the attention of your Society occurs in this part of the country, I shall assuredly transmit it to you. Mrs Robertson joins me in best compliments to Mrs Cairncross and the family—with, dear Sir, your humble servant, THOMAS ROBERTSON.”—*First Letter-book of Soc. Ant. Scot.*, p. 628.

The skull (consisting of the upper portion to the transverse nasal suture, with both of the large horn-cores complete) was presented to the Society at its meeting on the 17th July 1781; and the following reference to it is recorded in the Minute-book, vol. i. p. 72 :—

“Mr George Cairncross presented, from the Rev. Thomas Robertson of Selkirk, the bones of the head and flints of the horns of a large animal dug out of a marle-pit near Selkirk, at a place called Whitmuirhall. The circumference of each flint at the base is  $14\frac{1}{2}$  inches; the length of that on the right 27 inches, of the other 28 inches; the distance between the sockets of the eyes,  $11\frac{1}{2}$  inches; the breadth of the front, which is quite flat, from the sides immediately over the sockets of the eyes,  $12\frac{1}{2}$  inches; the depth from the top of the front to the top of the sockets of the eyes, 11 inches; and from the top of the front to the upper part of the insertion of the cartilage of the nose, 13 inches. This appears to be the animal described by Julius Cæsar in his ‘Commentaries,’ book vi. c. 5, by the name of *Urus*.”

<sup>1</sup> *Flint* of a horn,—Scots for Horn-core.

The Secretary, Mr James Cumming, in a letter dated 25th July, informs the Rev. Mr Robertson that the skull was presented to the Society, and "in the opinion of some able naturalists among us, it is believed to belong to that species of animal described by Julius Cæsar in his 'Commentaries,' lib. vi. c. 5, by the name of *Urus*."

The cranium No. 2 is tolerably entire (wanting only the nasal bones and the intermaxillaries; it measures now in total length, from the middle of occipital ridge to the extremity of the superior maxillaries in front,  $23\frac{1}{2}$  inches, and the molar teeth referred to in the description seem to have dropt out). Like all the others, the lower jaw is wanting. It was found in a moss in the county of Galloway, and was presented to the Museum of the Society by the Rev. David M'Robert, in the year 1782, and is referred to in the Minute-book, p. 205, July 12, 1782, as follows:—

"There was presented, from the Rev. David M'Robert, the skeleton of the head and flints of the horns of a large animal dug out of a moss in the county of Galloway, similar in species to the one described in page 72, paragr. ult., and nearly of the same dimensions; the whole length of the front measuring 2 feet 2 inches; two of the *dentes molares* remaining in the upper jaw, each having one deep furrow in the middle, and measuring on the under surface  $1\frac{1}{4}$  inch the one way, and  $\frac{7}{8}$  of an inch the other." No letter relating to this skull seems to have been preserved, as, unfortunately, a gap occurs in the letter-books at this period.

From the same reason we learn nothing of the last specimen presented, No. 3 (which is a nearly perfect skull, the nasal bones only being wanting), except what is stated in the Minute-book, July 9, 1782, p. 220:—

"There was presented from Thomas Scott of Hapsburn, Esq., the skeleton of the head and flints of the horns of a large animal similar in species to the one described in page 72, par. ult., and in page 205, paragr. 4, and nearly of the same dimensions, but more entire than either; the whole length of the front measuring 2 feet 4 inches, four of the *dentes molares* remaining in each side of the upper jaw, of the same size and shape with those in the head described in page 205."



As far as I am aware, these are the earliest instances on record of this large-sized ox being observed in Scotland, and it is interesting to find the conclusions come to in regard to them by the naturalists of this generation forestalled by a small body of quiet students of the Antiquities and Natural History of Scotland, meeting in Edinburgh so early as 1781; identifying these large cattle as being the same as the *Urus*, the gigantic ox described as occurring on the continent of Europe, by Julius Cæsar, in his "*De Bello Gallico*."

I need scarcely refer to the mistake made by the minister of Selkirk in his letter accompanying the first donation, that they were the remains of cattle of what he calls the "last century." The general opinion has been that they were extirpated in Britain before the invasion of the Romans, as historians are altogether silent on the subject of their existence. They had, however, apparently abounded, at least in Scotland, probably at a somewhat more early period, which seems to be shown by another part of Mr Robertson's letter, where he refers to various small brass axes being found along with the numerous crania of these large cattle. Unfortunately, he considered these axes as of very little consequence, from some supposed similarity to the tools of copper-smiths, though what work copper-smiths could have had to do in the wilds of Selkirkshire, so as to have left their axes lying about in such numbers, it is not very easy to understand. He apparently mistook the nature of these weapons, which were in all likelihood the ordinary bronze axe-heads or celts, now so well known as having been the weapons and tools of the early races who inhabited the British Isles, and which have been found over the whole country. (I exhibit various specimens of these bronze celts, palstaves, and socketed celts, which, I doubt not, correspond to the copper-smith's axes of the letter referred to. The accompanying woodcut shows various types of these axes.)

It has been stated, that bones of the *Bos primigenius* have been found indented with the primitive stone javelin of the aborigines of the north of Europe; here we apparently have them in close relation to the bronze weapons of a possibly still later age, showing that these animals roamed in our forests and marshes, and were hunted by the inhabitants of these early times in at least our northern kingdom of Scotland. Professor Owen says, "From the very recent character of the osseous substances in

the remains of these cattle, it may be concluded that the *Bos primigenius* maintained its ground longest in Scotland before its final extinction." And Professor Nilsson of Lund believes that the *Bos primigenius* was found in a wild or half-wild state in the forests of central Europe down even to the beginning or middle of the sixteenth century. (See papers on "The Extinct and Existing Animals of Scandinavia," in "Annals and Magazine of Natural History," 1849.)



Various Types of Bronze Axe-heads.

I have added to this paper some notes and measurements of the Urus from Professor Nilsson's communication "On the Extinct and Existing Bovine Animals of Scandinavia,"<sup>1</sup> already referred to.

Professor Nilsson designates this large ox:—

*Bos urus*, Antiquorum, *Bos primigenius*, Recentiorum.

"The forehead flat, the edge of the neck straight, the horns very large and long, near the roots directed outward and somewhat backward; in the middle they are bent forward, and towards the points turned a little upward."

<sup>1</sup> Annals and Mag. Nat. Hist., vol. iv. London, 1849, p. 256.

In a foot-note it is added :—

“Precisely such a direction have the horns of our tame oxen, quite contrary to the assertion of Bojanus and many others, who, in the unlike direction of the horns, choose to find a specific difference between the *Urus* and *Taurus*.”

“*Description*.—This colossal species of ox, to judge from the skeleton, resembles almost the tame ox in form and the proportions of its body; but in its bulk it is far larger. To judge from the magnitude of its horn-cores, it had much larger horns, even larger than the long-horned breed of cattle found in the Campania of Rome. According to all the accounts, the colour of this ox was black; it had white horns, with long black points; the hide was covered with hair, like the tame ox, but it was shorter and smooth, with the exception of the forehead, where it was long and curly.”

Professor Nilsson quotes Cæsar’s reference to the long-horned *Urus* or *Bubalus*, which Pliny tells us were synonymous, and distinguishes it from the Bison with long hair on the back, neck, or under the chin (Hist. Nat. viii. 5). Both of these animals, he says, “were carried to Rome, and viewed by the people in the circus.” Nilsson also considers that an engraving of the *Bos urus*, given in the fourth book, p. 416, of Griffith’s admirable “Animal Kingdom” (an English elaboration of Cuvier’s “Regne Animal”), copied from an old painting found at Augsburg, supposed to have been executed in the beginning of the sixteenth century, and marked *Thur* in gold letters, is really a representation of this *Bos primigenius*. From this he probably takes part of his description.

I have quoted Professor Owen’s concise description of the skull in the subsequent note of the *urus* found at Athole, Perthshire.

Several skeletons and various skulls are preserved in the Museum of the University of Lund, and Professor Nilsson gives details of the sizes of the different bones, which may be useful for reference with those found in our own country. The most perfect skeleton from which these measurements are taken was, he thinks, a young specimen, and larger detached bones and skulls have been found. Larger specimens have also been got in Britain. The *urus*, he says, has thirteen pairs of ribs and six lumbar vertebræ, in this way agreeing with the tame ox, and differing from the bison (*Bison priscus*, Owen), (*Bos Bison*, Linn.), which has fourteen pairs of ribs, and not more than five lumbar vertebræ. The rein-deer agrees in this respect with the bison, and the red deer with

the urus. The aurochs (or bison) is still preserved alive by the Emperor of Russia, in the forest of Bialoweska, Lithuania, now part of the Russian dominions.

*General Dimensions of Urus.*

"The whole length of the skeleton from the nape to the end of the rump bones (*ossa ischii*), . . . . . 9 feet.

Length of the head from the occipital ridge to the anterior border of the intermaxillary bones, . . . . . 2 feet 4 inches 4 lines.

The whole length of the animal is thus about . . . . . 11 feet 6 inches to 12 feet.

The height over the mane about . . . . . 6 feet to 6 feet 6 inches.

*Dimensions of Skull.*

	Ft.	In.	Lines.
The length from the horn-cores to the anterior edge of intermaxillary bones, . . . . .	2	1	5
The length from the orbit's lower edge to ditto, . . . . .	1	3	4
" horn-base to orbits, . . . . .	0	6	4
The length of horn-cores, concave side, . . . . .	1	6	6
" horn-cores, convex side, . . . . .	2	2	0
Under jaw, from the angle to the point, . . . . .	1	8	0
The molar series in the upper jaw, . . . . .	0	7	4
Breadth of the forehead between the upper part of the crown of the horn, . . . . .	0	9	1
Breadth between the lower parts of ditto, . . . . .	1	0	2
" the orbit's upper part, . . . . .	1	0	2
" the orbit's lower part, . . . . .	0	11	4
" the intermaxillary bones, upper parts, . . . . .	0	3	2
" the apertures of the ear in a line, . . . . .	1	0	4
Distance between the points of the horn-cores, . . . . .	2	4	0
The circumference of the crown of the horn, . . . . .	1	2	4

*Of Body.*

The length of the spinal column to the last dorsal vertebra, . . . . .	7	7	4
" further in a right line to the upper <i>tuber ischii</i> , . . . . .	0	9	0
" of the neck from atlas to and with the last neck vertebra, . . . . .	1	11	4
Greatest length of one of the middle ribs without the cartilage, . . . . .	2	5	0
Breadth of ditto, . . . . .	2	0	5-6



*Of Extremities.*

	Ft.	In.	Lines.
The length of shoulder-blade, . . . . .	1	8	0
Breadth of its base, . . . . .	1	0	0
The length of os humeri between the articulations, . . . . .	1	2	0
„ radius, . . . . .	1	2	4
„ ulna, with olecranon, . . . . .	1	7	6
„ olecranon from the articulation, . . . . .	0	7	0
„ metacarpus between the articulations, . . . . .	0	10	0
„ pelvis between the tub. ilii and ischii, . . . . .	2	1	4
The breadth in a line between both tub. ilii, . . . . .	1	11	0
The length of the os femoris between the articulations, . . . . .	1	7	0
„ tibia, . . . . .	1	5	6
„ metatarsus, . . . . .	0	11	0

For comparison with the plate of the skulls of the short-horned ox, I thought it would be interesting to give figures also of this large long-horned ox, the *Urus*. Unfortunately, however, none of the skulls in the Museum of the Society were sufficiently perfect for this purpose, and by the permission of Professor Duns, D.D., I have taken a sketch of the nearly perfect skull of this large variety of *Bos taurus*, as the late Professor John Fleming, D.D., described it in his “History of British Animals,” Edinburgh, 1828, 8vo. This skull is now preserved in the Museum of the New College here; it was found in Fifeshire, and an account of it is given in the subsequent Notes. I give a front view of the skull (taken from above, and therefore the horns appear perhaps rather low). In the skulls of the *urus* I have examined, the extremities of the horns are turned forwards and rather upwards; few have them turned so much outwards as represented by Professor Owen in his figure of the large skull from Atholl; probably due to its greater age and size. A side view drawn to the same scale. Also figures of the second and third maxillary molar teeth, the two last molars of the left side of the upper jaw. The teeth are figured of the natural size, and show at once their great size, as compared with those of the small short-horned ox (previously figured), and the close, indeed almost perfect correspondence of their structure, like the former, with those of our ordinary domestic cattle.

Cæsar, in his "Commentaries," states that in the Hercynian forest, which then covered a great part of Europe, there lived an animal which without doubt was the Rein-deer, another great animal called an Elk, and a third kind the Urus. As this is the earliest description of this



Skull of *Bos primigenius* found in Fifeshire (27 $\frac{1}{2}$  inches in length).

great ox, although it has been already referred to, still, from the interest attached to it, I quote here the whole passage:—

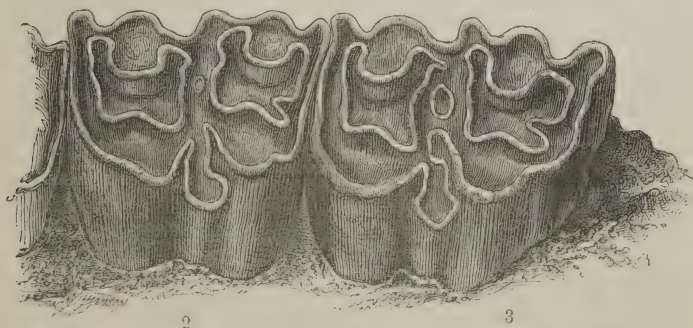
Lib. vi. cap. xxvii.—“Tertium est genus eorum qui Vri appellantur. Ii sunt magnitudine paullo infra elephantos, specie et colore et figura tauri. Magna vis est eorum, et magna velocitas; neque homini, neque feræ, quam conspexerint, parant; hos studiose foveis captos interficiunt. Hoc se labore durant adolescentes, atque hoc genere venationis exercent; et qui

plurimos ex his interfecerunt, relatis in publicum cornibus, quæ sint testimonio, magnam ferunt laudem. Sed assuescere ad homines, et man-



Side view of skull of *Bos primigenius*, found in Fifeshire.

sue fieri ne parvuli quidem excepti possunt. Amplitudo cornuum, et figura et species multum a nostrorum boum cornibus differt. Hæc



Two last maxillary molar teeth (second and third) of left side of Urus,  
*Bos primigenius* (natural size).

studiose conquisita ab labris argento circumcludunt, atque in amplissimis epulis pro poculis utuntur."—*De Bello Gallico*. (Edit. Paris, 1678.)





Professor William Turner described these skulls, and others, in a paper "On some Fossil Bovine Remains found in Britain,"<sup>1</sup> which was read before the Royal Physical Society in February 1859, and published in the Proceedings of the Society for 1859. He considers from the deep brown colour of skull No. III., that it had been found in peat, and that several bones of the skeleton of a similar colour probably belong to this same animal. He compared these bones with corresponding bones of a recent ox, and found that they exactly corresponded, only that the ridges, spines, &c., of the fossil bones were on a much larger scale, on account of their larger size. Mr Turner gives the following measurements :—

	Fossil.	Existing.
	Inches.	Inches.
<i>Right Femur—</i>		
Extreme length, . . . . .	20 $\frac{3}{4}$	17
Circumference of middle of shaft, . . . . .	7 $\frac{1}{4}$	5 $\frac{3}{4}$
Diameter across condyles, posteriorly, . . . . .	6	6
<i>Left Scapula—</i>		
Extreme length, . . . . .	19	15 $\frac{1}{4}$
" breadth, . . . . .	10 $\frac{1}{4}$	9 $\frac{1}{4}$
Length of spine, . . . . .	15	13
Largest diameter of glenoid fossa, . . . . .	3 $\frac{1}{4}$	2 $\frac{3}{4}$
<i>Right Humerus—</i>		
Extreme length, . . . . .	17 $\frac{1}{2}$	13
Circumference of middle of shaft, . . . . .	9 $\frac{1}{2}$	7
Breadth across condyles, . . . . .	4 $\frac{1}{4}$	3 $\frac{1}{2}$
Greatest diameter of articular surface of head, . . . . .	5	4
<i>Rib, probably 7th on right side—</i>		
Length, . . . . .	28	...
Greatest breadth, . . . . .	2 $\frac{1}{2}$	...
<i>Vertebra, 2d Cervical, or Axis—</i>		
Extreme height, . . . . .	8	...
Extreme antero-posterior diameter, . . . . .	7	...
Circumference of anterior articular surface, . . . . .	14	...

From the comparison of the bones with the recent ox, Mr Turner estimates that the skeleton of this extinct animal must have stood nearly 6 feet in height at the shoulder. Professor Turner has kindly allowed

<sup>1</sup> See Proc. Roy. Phys. Soc., vol. ii. p. 70, and Edin. New Philosophical Journal, July 1859.

me to examine the skulls in the Museum, and make these extracts from his paper.

*Edinburgh Veterinary College.*—In the Museum of this College, two skulls of the *Bos primigenius* are preserved; unfortunately, nothing is recorded of their history. One is nearly perfect, the tip of left horn-core being broken. The other consists of upper part of skull, with horn-cores. The following are some of their measurements:—

	No. I.	No. II.
	Ft. In.	Ft. In.
Length from centre of occipital ridge to front of inter- maxillaries (total length), . . . . . }	2 3	...
Do. to insertion of nasal bones, . . . . . }	0 11 $\frac{3}{4}$	...
Do. to upper edge of orbits, . . . . . }	0 11 $\frac{1}{10}$	0 11
<i>Orbits:—</i>		
Length, . . . . . }	0 2 $\frac{9}{10}$	...
Breadth, . . . . . }	0 2 $\frac{1}{10}$	...
<i>Horn-Cores:—</i>		
Length along outer curvature, . . . . . }	2 1	2 3
Breadth across concavity of both horn-cores, . . . . . }	...	2 5
Breadth from tip to tip of horn-cores, . . . . . }	...	2 2
Circumference at base, . . . . . }	1 2	1 2 $\frac{1}{2}$
Breadth of forehead between roots of horn-cores, . . . . . }	0 9	0 9 $\frac{1}{2}$
Length of alveolar sockets, . . . . . }	0 6	...
Depth of skull behind, from centre of occipital ridge to floor at occipital foramen, . . . . . }	0 8	0 9
Breadth of occipital condyles behind, . . . . . }	0 5 $\frac{7}{10}$	0 5 $\frac{8}{10}$

From the general appearance of these skulls, they may be assumed to have been found in marl-pits.

I am indebted to Dr James Murie for his kind assistance in their examination.

#### SELKIRKSHIRE.

*Royal College of Surgeons' Museum, Edinburgh.*—There is a fine specimen of a nearly perfect skull of the *Bos primigenius* preserved in the Museum of the Royal College of Surgeons, Edinburgh. It has much of the general aspect of the crania preserved in the Museum of the Society

of Antiquaries ; and as its label informs us, it is also from Selkirkshire, and was probably obtained from that county about the same period as the others, or a little later.

The skull is nearly perfect, except in the front of the maxillaries and intermaxillaries, which are slightly broken. There are three molars on each side, still in the alveolar sockets, but, like the rest of the skulls, the lower jaw has not been preserved. I annex some of its measurements for comparison with the other specimens :—

	Feet.	Inch: s.
Length from middle of occipital ridge to nasal suture, . . . . .	1	1 $\frac{1}{4}$
Do. to back part of orbits, . . . . .	1	0
Breadth of forehead between base of horn-cores, . . . . .	0	9
Breadth of back part of occipital condyles, . . . . .	0	5 $\frac{3}{4}$
<i>Horn-cores :—</i>		
Length along outer curvature, . . . . .	2	6 $\frac{1}{4}$
Length from centre of occipital ridge to point of right horn-core, . . . . .	1	11
Circumference at base, . . . . .	1	1 $\frac{6}{8}$
Approximate span of horn-cores, left being broken toward point, . . . . .	3	0
<i>Orbits :—</i>		
Length and breadth nearly equal, . . . . .	0	2 $\frac{3}{4}$
Do. of nasal bones, . . . . .	0	8 $\frac{1}{2}$
Length of series of maxillary alveolar sockets, . . . . .	0	6 $\frac{1}{2}$

I have to thank Dr J. Bell Pettigrew, the curator of the Museum, for assisting me in taking these measurements.

*Selkirk.—Whitmuirhall.*—The first skull of urus presented to the Museum by Rev. Thomas Robertson in 1781. It is already described in my paper, and was found in a marl-moss at Whitmuirhall, near Selkirk.

*Selkirk.*—In the “Statistical Account of Scotland” of Sir John Sinclair, Bart., Edinburgh, 1792, vol. ii. p. 434, the Rev. Thomas Robertson contributes the account of the Parish of Selkirk. He shows the increased knowledge of these ancient cattle, he had derived from his correspondence with the Secretary of the Society of Antiquaries in 1781, already described in my paper, and states that “some skulls of the urus, and a Roman spear with which these animals were destroyed, were found

lately in a moss near to Selkirk, and presented to the Society of Antiquaries." The following note is added:—

"For the description of this animal, and the honorary rewards conferred on those who distinguished themselves in destroying them, see Caesar's 'Commentaries,' lib. vi. chap. 5."

Alexander Jeffrey, Esq., Jedburgh, in his valuable "History and Antiquities of Roxburghshire," Edinburgh, 1864 (4 vols. 8vo), refers in vol. i. p. 244, to this occurrence of the urus in Selkirkshire, and adds a note that the spear, he believes, was found sticking in the skull. He recollects of reading this statement somewhere, but could not at the time remember where; I fear it requires confirmation.

I am also indebted to Mr Jeffrey for some references to the occurrence of the urus mentioned in the "Old Statistical Account of Scotland."

In the article *Selkirkshire*, of "Edinburgh Encyclopædia," 1830, it is stated that skulls of the *urus* have been found along with horns of red-deer, and palmated horns, I believe of Elk, *Cervus alces*.<sup>1</sup>

*Yarrow*.—In the "New Statistical Account of Scotland," it is stated that skulls of the urus, and of a palmated deer,<sup>1</sup> have been found in the marl-mosses.

#### ROXBURGHSHIRE.

*Jedburgh*.—There is preserved in the collection at Abbotsford a fine large skull of the *Bos primigenius*. It was found many years ago in a moss in the forest near Jedburgh, M. J. C. Clabeaux informs me, and favours me with the following measurements:—

	Feet.	Inches.
Length of skull from centre of occipital ridge to front of snout, . . . . .	2	3
Horn-cores, length of outer curvature, . . . . .	2	11
Horn-cores, length across from tip to tip, . . . . .	2	0 $\frac{3}{4}$

Mr A. Jeffrey, of Jedburgh, informs me a good specimen of the skull of the urus, found in the neighbourhood, is preserved in the museum there.

<sup>1</sup> See on Elk in Scotland, Proc. Soc. Antiq., vol. ix. p. 332.



*Ale Water.*—Many years ago, when driving with a relative down the valley of the river Ale, not far from the town of Lilliesleaf, I was rather startled by seeing two large, and to all appearance nearly perfect, skulls of the *Bos primigenius*, impaled one on each of the wooden posts of an old field-gate. Our Border blood was sorely stirred within us “to lift the cattle” skulls at once, and carry them off in our dog-cart; neglected, however, as they certainly appeared to be, we knew they were not ours, and their great size was a decided objection to our little plan, so we rather unwillingly drove off, leaving them to fall to pieces with exposure to the weather, and, as it seemed to us, be totally lost. However, it gave me an additional locality for this great ox, being sure the skulls must have been got from some peat-bog or marl-pit in the immediate neighbourhood of the field-gate on which they had probably been very recently impaled.

*Linton Loch.*—My friend, Mr James Elliot, Gallalaw, Kelso, informed me that Mr George Purves, the tenant of Burnfoot, drained part of Linton Loch many years ago; the bones of a large ox, described as the *Bos primigenius*, were got in the marl about the year 1826, and the animal to which they belonged was estimated to have stood about  $6\frac{1}{2}$  feet in height to the top of the shoulder. Mr Purves has still in his possession the skull and horns of a large red deer which were got there. He informed him that great numbers of deer horns were found; “in some parts they dug through a perfect mass of horns.” They also “came on a layer of hazel nuts, but nearly everything crumbled down on exposure to the air.” Mr Purves also found below the peat, and on the surface of the marl, a very perfect skull of the Beaver, *Castor fiber*, now preserved in the Museum of the Tweedside Physical and Antiquarian Society at Kelso. It was described by Dr Charles Wilson in an interesting memoir, entitled “Notes on the Prior Existence of the *Castor fiber* in Scotland.”<sup>1</sup>

*Hapsburn.*—A skull of the urus in the Museum of the Society, described in my paper, was presented in 1872 by Mr Thomas Scott of Hapsburn, Roxburghshire.

<sup>1</sup> See Edinburgh New Philosophical Journal, new series, July 1858.

## BERWICKSHIRE.

*Mertoun—Whitrig Bog.*—In this bog, in which the skull of the Elk, *Cervus alces*,<sup>1</sup> was discovered in 1871; besides skulls, &c., remains of the red-deer; skulls also of the great urus, *Bos primigenius*, have been found. Part of a skull of the latter, with large horn-cores, was discovered a few years ago. This consisted of a portion of the frontal bone with horn-cores, which measured each in length, along the outer curvature,  $28\frac{1}{2}$  inches, and  $12\frac{1}{2}$  inches in circumference at its base. The cord of the arc of the inner curve of the horn from its base to its tip, was 5 inches in greatest depth. The horn was got by Dr Henderson when living at Melrose, and was presented by him to the Hunterian Museum, Glasgow. I am indebted to Mr John Young of the Museum for the note of its dimensions, and he informs me traces of the peat still remain in the cavities of the skull, showing the bed in which it was discovered.

*Dunse—Swinton Mill.*—Mr George Logan, W.S., exhibited to the Royal Physical Society, in January 1866, a bone of this great ox, found in the course of operations for deepening the river Leet, near Swinton Mill. It was found in the alluvium a little below the surface. Professor Turner, who examined the bone, stated that it was a right humerus of a young animal.

## DUMFRIESSHIRE.

*Shaw.*—Sir William Jardine, Bart., informs me that, in a marl-pit on the property of George Graham of Shaw, Esq., there were found at the bottom of the moss, and lying on the marl, the remains of various animals, red-deer, roe-deer, *Bos primigenius* rare, the skull and rib of a black bear *Ursus arctos*, and horn of rein-deer.<sup>2</sup>

## KIRKCUDBRIGHTSHIRE.

William Carruthers, Esq., of the British Museum, informs me that in addition to the skull of the *Bos primigenius* from Athol, there is also in the Museum a specimen from a turbary in Kirkcudbrightshire, presented by Lord Selkirk in 1859. A large number of the bones of the skeleton

<sup>1</sup> Elk in Scotland, Proc. Soc. Antiq., vol. ix. p. 332.

<sup>2</sup> Rein-deer in Scotland, Proc. vol. viii.

as well as the skull are preserved. The length of the face from the occipital ridge to the end of the intermaxillary bones is 2 feet  $3\frac{1}{2}$  inches.

*Galloway*.—A skull in the Museum of the Society, already described in my paper, was found in a moss in the district of Galloway, and was presented by the Rev. David M'Robert in 1782.

#### AYRSHIRE.

*Maybole*.—In the account of this parish in the "New Statistical Account of Scotland," it is recorded by the Rev. Mr Gray that various animal remains have been found in marl-pits, including skulls of the Irish Elk, *Megaceros Hibernicus*,<sup>1</sup> and of "a large *Bos taurus*" (the *Bos primigenius*, I have no doubt). The latter measured 10 inches between the horns, and  $13\frac{1}{2}$  inches in circumference at the base of the horn.

#### RENFREWSHIRE.

*Crofthead*.—A portion of the skull, with a horn-core of the *Bos primigenius*, was found in a bed of clay in the valley of the Cowdenburn, near Crofthead, and was described by Mr James Geikie, H.M. Geological Survey, in the "Geological Magazine," London, for 1868. Mr Geikie considered the bed as intercalated with the true boulder clay of the district. Remains of the *Megaceros Hibernicus*<sup>1</sup> were found in the same locality in 1869, and were described by Mr John Young of the Hunterian Museum, Glasgow; they were on the same horizon as the remains of the *Bos primigenius*, at about 20 feet from the old surface of the ground. Bones of a small-sized horse, *Equus caballus*, were found in a lower series of the same deposits. Mr Young considered the beds in which these remains were found as comparatively recent lacustrine deposits.

#### LANARKSHIRE.

*Lanark*.—Mr William Lockhart, in his account of the parish of Lanark in "The Statistical Account of Scotland," vol. xv., Edinburgh, 1795, states: In September 1785, while digging the open part of an aqueduct for the first mill at the village of New Lanark, "there was found

<sup>1</sup> See Notice of Irish Elk in Scotland, Proc. Soc. Antiq. Scot., vol. ix. p. 346.

the skeleton of the *Bison Scoticus*, or urus, described by Cæsar, lib. vi., which has been extinct in Scotland for above 300 years. The cores or flints of the horns are still preserved, one in the College of Glasgow, and another in my possession; the last, though not entire, is 2 feet in length, and next the head measures above 15 inches in circumference."—(P. 34.)

*Clyde*.—When operations were carried on in 1833 in the alluvium of the river Clyde for improving the navigation, a skull of the large ox, *Bos primigenius*, and fragments of horns of the rein-deer,<sup>1</sup> were found in beds of fine laminated sand on the north bank of the Clyde, below the junction of the river Kelvin. These bones are now preserved in the Museum of the Andersonian University, Glasgow.

*Glasgow*.—In a paper by Mr James Bennie, "On the Occurrence of *Bos longifrons* and *Bos primigenius* in the Ancient Drift of the Clyde," published in vol. ii., 1867, of the "Transactions of the Geological Society of Glasgow," Mr Bennie states that a large horn, recognised by Dr Scouler as of the *Bos primigenius*, was found in an excavation in Greendyke Street, Glasgow, which was made for a sewer, and extended for a considerable distance. Its depth was about 10 feet, and the soil cut through consisted partly of forced earth, vegetable mould, and river silts, the silts being 7 feet deep where the horn was found. The horn, which Mr Bennie has allowed me to examine, belongs to the right side of skull, and has part of the frontal bone attached to it. It measures  $8\frac{3}{4}$  inches in circumference at its base, and 10 inches in length to its extremity, which is broken. The horn appears to be considerably weathered and worn, as if by rolling in the bed of a river.

#### FIFESHIRE.

*Newburgh*.—Professor John Fleming, D.D., in his "History of British Animals," Edinburgh, 1828, refers to a large skull of a *Bos taurus*, of which he gives the following details:—"It measures  $27\frac{1}{2}$  inches in length, 9 inches between the horns, and  $11\frac{1}{2}$  inches across at the orbits." It is now preserved in the Museum of the New College, Edinburgh, and a label fixed on it, in Professor Fleming's handwriting, tells us that

<sup>1</sup> See Rein-deer in Scotland, Proc. Soc. Antiq. Scot., vol. viii. p. 207.



it was found in a marl-pit at Newburgh. The skull is nearly perfect, with the exception of part of the intermaxillary of the right side, and the lower jaw, which is wanting. Several molar teeth remain in the alveolar sockets, and as they are well ground down, they show very distinctly the various folds of the enamel of the teeth, which exactly correspond in character, but of a much larger size, with that of the domestic ox. (See figures of this skull and its molar teeth previously given).

The following are some of the measurements of this skull :—

	In.	Lin.
Length of the skull from the supra-occipital ridge to front edge of intermaxillary bone, . . . . .	27	9
Length from supra-occipital ridge to nasal bones, . . . . .	13	3
Do. from centre of do. to upper edge of orbits, . . . . .	11	6
Do. of nasal bones, . . . . .	10	5
Do. of orbits, . . . . .	2	10
Breadth of orbits, . . . . .	2	9
Length from front of orbit to end of maxillary bone, . . . . .	12	0
Do. do. to front edge of intermaxillary bone, . . . . .	13	6
Breadth of forehead between roots of horn-cores, . . . . .	10	6
Do. across narrowest part about midway between roots of horn-cores and orbits, . . . . .	9	6
Do. of skull across middle of orbits, . . . . .	11	6
Do. across front of intermaxillary bones, . . . . .	4	9
Horn-cores, circumference of base, . . . . .	14	0
Do. length following outer curvature, . . . . .	24	6
Do. span across, from tip to tip, . . . . .	28	6
Length of alveolar sockets and molar teeth of upper jaw, . . . . .	6	6
Do. of skull from supra-occipital ridge to upper edge of foramen magnum, . . . . .	6	6
Do. of skull from supra-occipital ridge to the base of the skull, . . . . .	8	6
Breadth of occipital condyles posteriorly, . . . . .	5	3
Length of base of skull from front of foramen magnum to front edge of intermaxillary bones, . . . . .	22	6

#### PERTHSHIRE.

*Athol*.—Professor Richard Owen, in his valuable and beautiful work, "A History of British Fossil Mammals and Birds," Van Voorst, London,

1846, figures and describes a large skull of the *Bos primigenius* got from Athol. His description is at once so complete and concise that I shall quote it in full:—

“The characters of the *Bos primigenius*, as contrasted with the *Bison priscus*, may be advantageously studied in the magnificent specimen of an entire skull from near Athol, Perthshire, now in the British Museum. The concave forehead, with its slight median longitudinal ridge; the origin of the horns at the extremities of the sharp ridge which divides the frontal from the occipital regions; the acute angle at which these two surfaces of the cranium meet to form the above ridge,—all identify this specimen with the *Bos primigenius* described by Cuvier, Bojanus, and Fremery. The cores of the horns bend at first slightly backward and upward, then downward and forward, and, finally, inward and upward, describing a graceful double curvature; they are tuberculate at the base, moderately impressed by longitudinal grooves, and irregularly perforated. The skull is one yard in length, and the span of the horn-cores is 3 feet 6 inches; but other British specimens of the *Bos primigenius* have shown superior dimensions of the bony supports of the horns. The breadth of the forehead between the horns is  $10\frac{1}{2}$  inches; from the middle of the occipital ridge to the back part of the orbit it measures 13 inches; the length of the series of upper molar teeth is  $6\frac{1}{2}$  inches; the breadth of the occipital condyles is 6 inches.”—(P. 502.)

In this description Professor Owen states that the skull is one yard in length; this measurement, however, is taken from the occipital condyles, over the occipital ridge, to the front edge of the intermaxillary bones. The length of the face of the specimen, from the centre of the occipital ridge to the front edge of the intermaxillary bones, is 2 feet 7 inches; this latter measurement is given as the length of the skull, in all the other instances I have described. The length of the left horn-core (the tip of the right is broken off) is 2 feet  $4\frac{1}{2}$  inches along its outer curvature, and the core measures 14 inches in circumference at its base.

*Moulin*.—In “The Statistical Account of Scotland,” vol. v., Edinburgh, 1793, the Rev. Alexander Stewart, in his account of this parish, states—“The skull of a large-horned animal was found some years ago in a marl pit, half a mile from Moulin, and is preserved at that house. The head is shaped like that of an ox; the horns are lost, but the pith is entire; the length of the skull, from the edge of the bone between the horns to the extremity of the upper jaw, is  $26\frac{1}{2}$  inches; the greatest circumference

of the pith (or horn-core), 13 inches; the diameter of the eye-socket,  $3\frac{1}{2}$  inches; and the distance between the eyes,  $10\frac{1}{2}$  inches. It is supposed to have belonged to one of those animals which Cæsar calls Uri, and which were found in the Hercynian forest in Germany, 'Bell. Gall.,' lib. vi. cap. 26."—(P. 70.)

*Muthil*.—The Rev. John Scott, in his account of this parish, published in "The Statistical Account of Scotland," vol. viii., Edinburgh, 1793, states that—"At this time there are no wild deer, but as the horns of both the elk and forest deer of a very large size have of late been found in marl pits, on both sides of the parish, and as the head and horns of the urus (*Bos ferus* of Linnæus) or mountain bull were lately dug up at the side of a small lake near Drummond Castle, it plainly shows that forest deer, and the other animals now so little known, once frequented this part of the country."—(P. 487.)

*Drummond Castle*.—A fine specimen of a skull of the *Bos primigenius*, got in a marl-pit in the neighbourhood several years ago, is preserved at Drummond Castle. Other skulls of the same kind were found at the time, and were given away as presents.

#### ABERDEENSHIRE.

*Belhelvie Moss*.—Professor John Struthers, M.D., &c., of Aberdeen University, has kindly furnished me with the annexed measurements of a skull and bones of the *Bos primigenius* found in Belhelvie peat moss, a few miles north of Aberdeen, and now preserved in the Museum of the University.

(A.) *Upper part of Skull (frontal and occipital regions), with  
Horn-cores complete.*

		Inches.
1. <i>Horn-cores.</i>	Length along outer curvature, . . .	31
2. "	Girth at their roots (at the raised edge), . . .	14
3. "	Do. at the middle, . . .	$10\frac{1}{4}$
4. "	Tip to tip, . . .	$23\frac{7}{8}$
5. "	Width between greatest convexity of horns, . . .	$36\frac{1}{4}$
6. "	Do. between greatest concavity of horns, . . .	$30\frac{3}{8}$

	Inches.
7. <i>Direction of horns.</i> The occipital surface of the skull being placed vertical, the horns rise $7\frac{1}{2}$ inches to the tip, the first $\frac{1}{3}$ a little convex, the last $\frac{2}{3}$ concave upwards.	
8. Breadth across forehead between roots of horn-cores—	
(a) To raised edge of horn-core, . . . . .	$12\frac{3}{4}$
(b) To beginning of rough surface of do., . . . . .	$9\frac{1}{4}$
9. Breadth across crest of skull—	
(a) To raised edge of horn-core, . . . . .	$11\frac{1}{2}$
(b) To beginning of rough surface of do., . . . . .	$9\frac{1}{4}$
10. Length from crest to occipital foramen, . . . . .	$7\frac{3}{4}$
11. Occipital foramen—	
(a) Vertically, at surface, . . . . .	$2\frac{1}{8}$
(b) Transversely, at same level as last, . . . . .	$2\frac{1}{8}$
(c) „ at level of edge of condyle, . . . . .	} $1\frac{3}{4}$
„ at ridge of condyle, . . . . .	
12. Between extreme outer edges of condyles, . . . . .	$5\frac{3}{4}$
13. Breadth of condyle along its ridge, . . . . .	$2\frac{1}{2}$
14. Thickness of top of head 4 inches below crest, between frontal and occipital surfaces, . . . . .	$3\frac{1}{2}$

(B.) *Humerus.* (About lower third.)

15. Extreme breadth at lower end, . . . . .	$4\frac{7}{8}$
16. Breadth between edges of articular surface, . . . . .	$4\frac{1}{4}$
17. Girth at 5 inches above lower end, . . . . .	9

(C.) *Fore-arm.* (Lower  $\frac{1}{3}$  or  $\frac{1}{4}$ ) Radius and Ulna are ankylosed.

18. Extreme breadth at lower end, . . . . .	$4\frac{3}{8}$
19. Breadth of entire carpal articular surface, . . . . .	$3\frac{7}{8}$
20. Girth 5 inches above lower end, . . . . .	10
21. Girths of radius and ulna separately, where an interosseous vacuity allows a cord to pass—	
(a) Radius, $3\frac{3}{4}$ inches above lower end, . . . . .	$9\frac{3}{4}$
(b) Ulna, 3 inches above its lower end, . . . . .	4

(D.) *Colour of the Bones.*

All the portions present a uniform clay-brown colour. Forehead mostly of a darker colour, but no streaks or spots.



## SUTHERLANDSHIRE.

*Kintradwell*.—In February 1864 the Rev. J. M. Joass of Golspie, then of Eddertoun, made some excavations in a ruined building, a broch at Kintradwell, near the sea-shore, and found the remains of various animals, as the pig and red-deer, with the frontal bone and horn-core, and other bones of a large animal of the ox tribe.

## CAITHNESS-SHIRE.

*Keiss*.—Among the bones of animals brought from Keiss, in the Museum of the Society, there is the upper part of the skull of a large ox, with the frontal bone, and a horn-core of the left side, which is broken. The horn-core measures 10 inches in circumference at its base, and 12 inches in length along its outer curvature to its fractured extremity, which is now imperfect. Its large size corresponds more to that of the *Bos primigenius* than to any other ox. It was discovered many years ago by Mr Joseph Anderson in an ancient mound on the sea coast at Keiss. The horn is much weather-worn, and perhaps belonged to a young animal.

*Breckigo*.—The frontal portion of a skull, with large horn-cores attached, of the *Bos primigenius*, found in the marl of the Loch of Breckigo, along with various antlers of red-deer; was presented to the Museum by Bentley Innes, Esq. of Thrumster, in June 1870.

	Feet.	Inches.
The skull measures across the forehead, between the roots of the horn-cores, . . . . .	0	9
Length from occipital ridge to lower border of foramen magnum, . . . . .	0	9
Breadth across back of occipital condyles, . . . . .	0	5 $\frac{3}{4}$

The horn-cores are nearly perfect :—

The right horn-core measures along its outer curvature, . . . . .	1	11
Circumference at base, . . . . .	1	1
Left: length along its outer curvature, . . . . .	1	10
Circumference at base, . . . . .	1	0
Length between points of horn-cores, . . . . .	2	1
Greatest width across inside curve of horn-cores, . . . . .	2	3

*Bower*.—I am indebted to Mr Joseph Anderson for the two following notices of the occurrence of the *Bos primigenius* in this county, which were published at the time in the "John o' Groat Journal." They are remarkable from the fact of the horns of two of these large cattle being in each instance apparently locked together, as if they had been fighting in the bog, and each had been mutually exhausted, and thus destroyed by his opponent.

The first was discovered on Monday, 12th August 1839, by Mr John Bremner, Toff Kemp, in the parish of Bower, when digging for marl in a moss on the estate of Thura. He discovered bones of some animals of the ox species, but of a great size (the *Bos primigenius*). They were upwards of 3 feet under ground, and in a high state of preservation. Two heads were locked together by the horns, as if the animals had killed one another. One of the heads is preserved, and various other bones; they were measured in the presence of several individuals. The horn-cores of the horns only remain, forming a graceful curve of 5 feet 10 inches from tip to tip (along the curvature of the horns); breadth of skull across eyes (and horn-cores?), 1 foot 6 inches; one of the ribs measured  $3\frac{1}{2}$  inches at the broadest part, and 3 feet 1 inch in length. Largest joint of leg-bone (femur?) measures 9 inches in circumference, but the bone itself is comparatively short. Unfortunately, from the non-scientific character of the measurer, it is not quite certain to what he refers.

The second instance was discovered in the same parish of Bower, at Clayock, near the loch of Scarmclett, by Alexander Ross, when digging a drain in the beginning of October 1840. Two heads were found together 3 feet under ground, as if the animals had fought and died together. The horns measured 5 feet from tip to tip (along curvature), and 11 inches in circumference.

#### ORKNEY.

*Mainland, Sandwick, Skara*.—Samuel Laing, Esq., in his paper on the "Age of the Brochs," already referred to,<sup>1</sup> compares the collection of animal remains, &c., found by Mr William Watt at Skaill, with those found by himself in Caithness. He states that the fauna appeared to be the same with that of the burgs or brochs, but with one remarkable

<sup>1</sup> Proc. Soc. Antiq. Scot. vol. viii. 1867.

exception, viz., "that in addition to the small straight horns of *Bos longifrons*, there were several large ox horns, which from their size and curvature must have been those of *Bos primigenius*, of which specimens have been found in the peat mosses, though, as far as I am aware, not before in connection with any ancient dwellings in Orkney or Caithness. One horn, now exhibited, was nearly 12 inches in circumference at the base, and had been upwards of 2 feet long."—(P. 76.) The remains of the small ox include a horn-core of right side partially broken; it measures 8 inches long, and nearly 7 inches in circumference at the base.

George Petrie, Esq., Corr. Mem. S.A. Scot., in a paper also read to the Society, April 1867,<sup>1</sup> gives a detailed account of the curious underground remains of buildings found at Skara, Bay of Skail, worked out by Mr William Watt. After describing the ancient types of many of the bone and stone implements found, he states, that these remains are of very considerable antiquity may be inferred as well from the ancient type of the implements, as "also from the fact, that the bones and horns of animals long since extinct in Orkney, such as the deer, and it is believed the *Bos primigenius*, were thickly strewed throughout the debris of the building."—(P. 210.)

THE AGE OR GEOLOGICAL RANGE OF THE LARGE LONG-HORNED OX, THE URUS (*Bos primigenius*, Owen), IN BRITAIN, AND ESPECIALLY IN SCOTLAND.

Julius Cæsar described the urus as being then found with the elk and rein-deer in the Hercynian forest. Pliny states that the northern peoples drank out of urus horns, which were so large as to contain an urna. Professor Nilsson considers this statement probably an exaggeration.

Professor Nilsson believes that the urus came in, long *after* the Scandinavian boulder period, at a much later time than that during which the same species lived in England; he therefore supposes it had never attained to the same size in Scandinavia as in England. It lived in Scandinavia contemporaneously with the rein-deer and elk (their fossil remains being not unfrequently found together in our old turf-bogs). Its remains are also found abundantly in the Danish kitchen middens.

<sup>1</sup> Proc. Soc. Antiq. Scot. vol. viii.

In the Museum of the University of Lund, there is a skeleton of a urus which was discovered in a peat bog in 1840, under Professor Nillson's own inspection, near to Ounarp, in the district of Wemmenhög, in the south of Scania. It has, near the edge of the spinous process of the first lumbar vertebra, an opening surrounded with callus, which passes out on the back, and is continued through the projection of the next bone.<sup>1</sup> The Professor supposes this wound had been caused by the stroke of a javelin, the animal being struck from the front, and that the head of the spear had afterwards suppurated out. Various celebrated anatomists and physiologists also agree with Professor Nillson in this explanation of the cause of the injury. He therefore considers this instance proves that this animal had lived in Scania after the country was inhabited by man during the Stone period, and also during some part of the Bronze age, as a war-trumpet of bronze described and figured by him is, he considers, evidently copied from a horn of the ure-ox.<sup>2</sup>

In Professor Rüttimeyer's catalogue of the "Animal Remains of the Lake Dwellings of Switzerland," he states that the *Bos primigenius* has been found at Robenhausen, Mooseedorf, Wanwyl, and Concise, and what he has designated the *Bos taurus primigenius* at Robenhausen, Mooseedorf, Meilen, Concise, and Bienne. No skulls of the *Bos primigenius* have, however, as yet been discovered on the older sites, so as to put beyond a doubt the supposed fact of its presence; and in the later ones the horn-cores and bones, which are believed to represent it, are also stated to be considerably less in size than the ancient urus or *Bos primigenius*.

In England the *Bos primigenius* is found in the Fen and Turbary deposits of the alluvium, and Professor Owen includes it in the list of animals found in the caves and the drift and fresh-water deposits of the newer Pliocene formation, associated with the remains of recent and also the extinct mammalia, as the elephant, rhinoceros, &c. The presence of its remains in the Cromer forest-bed in Norfolk, associated with many of the extinct mammalia, takes it back to the times before our glacial epoch, and therefore to a remote antiquity. Following the order given by Sir Charles Lyell, Bart., from the present to the past, it lived through the

<sup>1</sup> For notice and figures, see "The Primitive Inhabitants of Scandinavia," by Sven Nillson, translated by Sir J. Lubbock, London, 1869, p. 369.

<sup>2</sup> Bronze Age, p. 93, by Professor Nillson.



Recent and Post-Pliocene divisions of his Post-Tertiary Period. Still further back it may be traced into the Newer-Pliocene, or first division of his Pliocene Period, beneath the glacial drifts, as in the pre-glacial forest-bed of Cromer; beyond which its remains have not as yet been discovered.

In England very few instances have been recorded of the association of the bones of the urus with the remains of man. One is referred to by Professor Owen in his "British Fossil Mammals," published by Mr Woods, as the discovery of the skull and horns of the great urus in a tumulus on the Wiltshire Downs. In the "Account of the Blackmore Museum at Salisbury, 1868," various important papers were published on different archaeological subjects read at the opening meeting, was one by Mr Boyd Dawkins "On the Pre-Historic Mammalia found associated with Man in Great Britain." This discovery of the skull of a urus in a tumulus in Wiltshire is there referred to. He says:—"It is remarkable, as being the only authenticated instance of the occurrence of the animal with the remains of man in pre-historic times in Britain." Mr Cunningham stated this was an error, for which he was partly responsible from a statement he had made in the "Wiltshire Magazine." He believed now, that the remains of the urus were not found in a barrow at Cherhill, but in a bed of local drift close to the rivulet which flows through the valley round the foot of Oldbury Hill. Thinking there might still be some doubt on the matter, I wrote to Dr John Thurnam,<sup>1</sup> Devizes, who I was sure would be cognisant of all the facts of the case, and received from him the following reply:—"There is no really reliable record of the discovery of part of the skull and horns of *Bos primigenius* at Cherhill near Calne. The first published notice is in Henry Woods' 'Description of Fossil Skull of Ox at Melksham,' 4to, 1858, with plate. The Cherhill specimen is named at p. 26. It is there said to be from a tumulus, and this account is repeated in the brief reference by Mr Cunningham in the 'Wilts Magazine,' vol. iv. p. 139, to which you refer. The original report was by a Mr S. Money, an undergraduate (?) at the time, and probably is to a great extent founded on hearsay. From what has since been heard, Mr Cunningham now believes that the horns were

It is with much sorrow I have to record the lamented death of this accomplished medical man and antiquary, before these sheets were printed off. John Thurnam, M.D., F.S.A., died suddenly at Devizes on the 24th September 1873.

not from a barrow at all, but from the bed of a rivulet. This is confirmed by the fact that some pottery said to be found with the horns, seems to be water rolled, but whether the two are contemporary is very doubtful. The whole are now in the Devizes Museum (Wilts Arch. Soc.) Mr Cunningham gives a good woodcut of the horns."

In his memoir "On Ancient British Barrows," Archæologia, vol. xlii. (1869), Dr Thurnam mentions that:—"The Rev. W. C. Lukis presented to the Museum of the Wilts Archæological Society, at Devizes, the very large horn-core of an ox, possibly *Bos primigenius*, from some excavations made by him in the Chambered Long Barrow at Tidcombe, in North Wilts. The barrow, however, had been previously rifled, and it is doubtful whether or not this horn-core is of a period coeval with or subsequent to its erection." Dr Thurnam classes the long barrows as belonging to the Stone Period of the antiquary. This instance would, therefore, appear to show the association of the urus with the early inhabitants of the country. Remains of the small ox, *Bos longifrons*, though in small numbers, and also of the horse, &c., have been found in the Long Chambered Barrows. In describing what he considers the earlier simple Unchambered Long Barrow, Dr Thurnam says:—"The remains of oxen found by me in the long barrows were uniformly such as zoologists and comparative anatomists refer to the ancient small species, the *Bos longifrons* or *Bos brachyceros*."

A third instance of the association of the urus with man in England is recorded in the "Geological Magazine," London, vol. vi., Feb. 1869, in a paper entitled, "Man and the Mammoth; being an Account of the Animals found associated with Early Man in Pre-historic Times," by Henry Woodward, F.G.S., &c. of the British Museum. He states that:—"A grand head and entire horn-cores, with a large proportion of the skeleton of the *Bos primigenius*, was obtained from beneath the peat near Cambridge. The peat had grown into and filled the cavities of the skull and all the bones. On the removal of the peat from the frontal bone, a stone celt was disclosed broken off short in the forehead, which it had pierced, and had been apparently left there as useless by the hunter to whose skill the mighty beast had fallen. The specimen is now in the Woodwardian Museum, Cambridge." Mr Woodward considers that the hunter had left his broken celt sticking in the skull apparently as useless,

but it would appear he had also left the whole animal, as a large portion of the skeleton was found in the bog. The urus, we may of course suppose, on receiving its death wound, had fallen into the bog and been lost. As previous accounts showed similar statements were founded on a mistake, I was anxious to learn the exact relation in this instance of the stone celt to the fractured skull, but have unfortunately as yet failed to get any precise information. Mr Keeping, the Curator of the Museum, tells me the skull was found about 1863 by workmen while digging for peat in the fens at Burnwell near Cambridge. The men sold it to Mr W. Farren, and Dr Carter secured it for the Museum. The skull and much of the skeleton were obtained. The skull measures 2 feet 5 inches in length, and  $9\frac{1}{2}$  inches across the forehead between the roots of the horn-cores. The horn-cores measure 2 feet  $2\frac{1}{2}$  inches along their convex surface. There is an irregular fracture in the frontal bone between and rather above the orbits, which it is supposed was caused by the celt. He has kindly sent me a sketch of the celt, which shows apparently the lower and broader extremity of an ordinary shaped stone celt, partially chipped on the side, with the front polished at its edge. It measures  $2\frac{1}{2}$  inches across its face, and 3 inches in length to its fractured surface above; and its maximum thickness is  $\frac{3}{4}$  of an inch. It seems rather a small and feeble weapon to have pierced the strong forehead of the skull of a large urus. I would, therefore, desiderate more minute information as to the relations of both when first discovered, and would rather be inclined to suppose that, like those already referred to as found at Whitmuirhall near Selkirk, the stone celt may have been simply found lying in the same bed, and perhaps not more closely associated with the skull.

Mr Thomas Bateman, in his "Ten Years' Digging in Celtic and Saxon Grave Hills," London, 1861, gives a list of the "Animal Remains found in the Tumuli associated with Works of Human Art." In this list he includes of the "BOVIDÆ, *Bos urus*? *Bos longifrons*? Domestic Cow;" and states that the "remains are usually too imperfect to admit of the assertion of three species, but we think that at least two may be recognised."

In Scotland, as shown by the various instances I have been able to collect, we find the remains of the urus have been discovered in our clays and river drifts and gravels, our lacustrine deposits, our marls and peat-bogs, and in a few cases associated with the remains of other animals,

apparently among the debris in the ruins of our ancient human dwellings, suggesting, from their rarity there, as compared with the remains of the small short-horned ox, that they had been probably spoils of the chase, and not the remains of slaughtered domestic animals. With the exception of the bones found at Crofthead, described by Mr Geikie as in a bed intercalated with the boulder clay, and therefore, he thinks, of the glacial period, I know no other instances corresponding to those in England belonging to such an ancient period as the Glacial or Pre-Glacial times. It would appear, also, to have been exterminated at an early period, as no distinctive reference to its existence occurs, as far as I am aware, in any of our early Scottish records. I have already stated, on the authority of the Rev. Thomas Robertson, the discovery in 1781 of skulls of the urus in marl pits near Selkirk, and the discovery in the same locality of what appears to have been various bronze weapons, suggesting, at least, the possibility of the animals having existed at the time those weapons were used by the early natives of the district. The remains, apparently allied to this great ox, found in the ruins of human dwellings of Caithness and Orkney, may perhaps be considered to bring its existence down to the times just preceding the invasion of the Norsemen in the north of Scotland, from about the sixth to the eighth or ninth centuries.

Cæsar tells us that in his time the urus was considered as quite untamable; and if it ever was domesticated, it does not appear, as far as I am aware, to have existed in this state in Britain, or at least in Scotland.

Professor Nilsson says :—"That this wild ox has contributed to produce the race of our large long-horned cattle is more than probable. When and where this colossal flat-foreheaded, large-horned, wild ox first became tamed we do not know; but certainly it took place in remote antiquity, and in a land far distant from us. . . .

"It appears to me probable that it was first tamed either in the south or south-west of Europe, or already in Asia by some Celtic race; but, nevertheless, long after this it was often found in a wild or half-wild state in the forests of Central Europe, even till the beginning or middle of the sixteenth century; that the tame race which sprung therefrom, perhaps, like all tame races, became gradually smaller than the wild stocks, but yet larger than other tame races which spring from smaller



stocks ; and it was this *large breed of black cattle* which the Celtic races brought with them here to the north, and which are spoken of in many passages of our Sagas as belonging to the Tötens (giants)," &c.

I have already brought forward the opposite view of Mr Youatt and others, that domestication and man's management, instead of diminishing, may increase the size of animals long under his care. Probably both the one effect and the other may be produced under man's management and the varying circumstances of his position, in different parts of the world.

The great urus would appear, as far as we at present know, to be more ancient than the small short-horned ox, but both may be considered varieties only in size and a few unimportant particulars of the same species, the *Bos taurus*. The genus *Bos*, indeed, along with the few other genera or species from which man has derived his domesticated animals, seem to have had implanted in them, by their great Creator, a special and peculiar power of adaptation, shown now in their many varieties, to the ever varying circumstances of climate, food, and shelter, fitting them thus to be taken by man, in all his wanderings, as he spreads abroad over almost the whole of the habitable earth.

DISTRIBUTION OR RANGE OF THE LARGE LONG-HORNED OX, THE URUS (*Bos primigenius*, Owen), IN BRITAIN, AND ESPECIALLY IN SCOTLAND.

This colossal species of ox, Professor Nilsson tells us, "was formerly widely spread over the greater part of Europe, from the present Scania to France and Italy, and from England to the northern and western parts of Asia ; as in all those places its fossil bones are found in more recent strata." In the catalogue of Mammalian Remains discovered in Ireland, by R. H. Scott, Esq., given in the "Journal of the Geological Society of Dublin," 1864, and "Geological Magazine," London, 1870, it is stated that no remains of the *Bos primigenius* have as yet been found in Ireland.

In England the urus has been discovered in many and various localities. In Scotland, as shown by the numerous instances I have now been able to group together, it occurs from Selkirkshire and Roxburghshire on the south, and from Berwickshire on the east coast, to Kirkeudbright, Galloway, and Ayrshire on the west ; through many of our midland counties, and passing on by Aberdeenshire, to Sutherland and Caithness on the north, and even, as it is stated, to the Orkney Islands.

Its remains have therefore been found over the greater part of Scotland, more especially, as yet, along its eastern borders, to the extreme north of our island.

*Note.*—W. Boyd Dawkins, Esq., M.A., &c., has published important memoirs in the "Quarterly Journal of the Geological Society of London," "On the British Fossil Oxen," *Bos urus*, vol. xxii. 1866; *Bos longifrons*, vol. xxiii. 1867. These I was not fortunate enough to have seen until I had collected my recent Notes on the Scottish cattle. I can only refer those who wish to study the subject to these, and the other valuable memoirs published by Mr Boyd Dawkins on the "British Post-Glacial Mammals," vol. xxv. 1869, and on "The Classification of the Pleistocene Strata by means of the Mammalia," &c., "Quart. Journal Geol. Soc. Lond." for 1872.

## XI.

ADDITIONAL NOTE TO COMMUNICATION ON "THE ANTIQUITIES OF CULLEN AND BANFFSHIRE" (SEE PAGE 274). BY ANDREW JERVISE, Esq., F.S.A. SCOT.

As Andrew Duff of Muldavit, the husband of Helen Hay, is said to have died about 1519 (Douglas' "Baronage," p. 138), the aisle of the church of Cullen and the inscription must belong to the first half of the sixteenth century. Until 1792 there was a recumbent effigy in the recess-tomb in the south aisle at Cullen, also a slab with a figure in armour, rudely incised, to the memory of John Duff of Muldavit, who, it is stated thereon, died in 1404.

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After the ordinary business of the meeting, the Chairman, in name of the Society, presented THOMAS B. JOHNSTON, Esq., Vice-President, with a piece of silver plate in token of their estimation of his valuable services as Treasurer of the Society, an office which he had filled for twenty-one years previous to his retirement in November last.

The Society then adjourned to St Andrew's Day, 1872.

# INDEX.

	PAGE
Abbey Craig, Stirling, . . . . .	40
Aberbrothock, Abbey of, . . . . .	71
Aberdeen, Pennies of Alexander III. struck at, . . . . .	273
Abernethy (James), of Netherdale, Donation of Deed of Legitimation of, . . . . .	79
Abthane Lands of Monifieth, . . . . .	72
Abyssinian Gospels, Donation of Six Folios of, . . . . .	11
Acheson (John), Notice of Permissions given to, to make Dies with the Portrait of Mary Queen of Scots, . . . . .	506
Achnacree, Cairn of, . . . . .	409
Acland (Rev. C. L.), Notice of Peruvian Antiquities by, . . . . .	234
Adam (Dr Walter), Skull and Pelvis of Ox found at Kinneil, presented by, . . . . .	627
Aitken (T.), M.D., Report on Crania found in Pictish Towers, Sutherland-shire, . . . . .	60
Aldrovandus on Ancient British Wild Cattle, . . . . .	607
Alexander (Col. Sir James), Notice of a Compressed Skull and Peruvian Pottery, by, . . . . .	233
——— Notice of Audun, an old Caledonian Fort on Benledi, by, . . . . .	387
Amisfield Castle, Donation of Portions of State Bed at, . . . . .	462
Analysis of Earth from Floor of Lake Dwelling at Ledaig, by Dr R. Angus Smith, . . . . .	98
——— by Dr Stevenson Macadam, of Beads found at Culbin Sands, . . . . .	81
——— of Vitrified Matter, from Vitrified Fort of Dunagoil, in Bute, by Dr R. Angus Smith, . . . . .	84
——— of Crust from interior of Infants' Feeding Bottle, by Dr Macadam, . . . . .	115
Anderson (John), Donation by. Facsimile of Rothiemay's Birds'-eye view of Edinburgh, . . . . .	220
Anderson (Joseph), Donation by. Collection of Relics from the Brochs of Caithness, . . . . .	243
——— Notice of Excavation of the Brochs of Yarhouse, Brounaben, Old Stirkoke, and Dunbeath, Caithness, by, . . . . .	292
——— Notice of the Excavation of Kenny's Cairn, Carn Righ, The Warth Hill Cairn, and several smaller Sepulchral Cairns in Caithness, by, . . . . .	293

	PAGE
Anderson (Joseph), Donation through. Collection from Sepulchral Cairns in Caithness, . . . . .	355
——— Donation by. Collection of Remains from Brochs in Caithness, . . . . .	355
——— Description by Ibn Fozlan (an eye-witness) of the Ceremonies attending the Incremation of a Norse Chief, &c., translated by, . . . . .	518
——— Notes on Evidences of Spinning and Weaving in Pictish Towers, by . . . . .	548
Anderson (Thomas S.), Donation by. Two Keys and Portion of Glass Vessel found at Lindores Abbey, . . . . .	221
Angus (Gilchrist), Earl of, . . . . .	71
——— (Malcolm), Earl of, . . . . .	72
Anthropological Society of London, Donation by. Collection from Sepulchral Cairns in Caithness, . . . . .	355
Antiquaries of Scotland, Anniversary Meeting of, . . . . .	2, 351
——— Annual Reports of, . . . . .	4, 353
——— Office-Bearers of, . . . . .	1, 351
——— Fellows Elected, . . . . .	{ 3, 5, 53, 78, 153, 179, 219, 238, 353, 356, 380, 392, 443, 460, 532
——— Visitors to Museum of, . . . . .	4, 354
——— Corresponding Members Elected, . . . . .	219, 238, 392, 532
Anysley (John), Notices from Original Documents of, . . . . .	167
Are, Joan of, . . . . .	16
Archer (Thomas C.), Roman Milestones deposited in the Museum by, . . . . .	464
Archattan, . . . . .	90
——— Priory of, . . . . .	102
Ardgour, Bronze Celts found in a Cave at, . . . . .	182
Ardoe, Aberdeenshire, Notices of Cists and Urns found at, . . . . .	269
Armstrong (R. B.), Donation by. Bronze Ring Brooch found at Girvan, . . . . .	249
Arniebog, Roman Sculptured Tablet found at, . . . . .	472
Arrow-Heads of Flint, Donation of, . . . . .	11
Arthur's Oon, . . . . .	43
——— Donation of an Account of, . . . . .	58
Arthurlee, Renfrewshire, Notice of a Cross-Shaft at, . . . . .	451
Assyrian Sculptured Slab, Donation of, . . . . .	6
Auchinlaich, Dun at, . . . . .	37
Auchterless, Notice of Circular Foundations at, . . . . .	157
Audun, an old Caledonian Fort on Benledi, Notice of, . . . . .	387
Autographs, Donation of, . . . . .	393
Baikie (Robert), of Tankerness, Donation by. Pipe-Case of Ebony, . . . . .	504
Barbreck, Glenorchy, Notice of Coins found at, . . . . .	272
Barhapple Loch, Wigtownshire, Circle of Stakes in, . . . . .	377
Barlochart Loch, Wigtownshire, Artificial Island in, . . . . .	377



	PAGE
Barnsallzie Loch, Wigtonshire, Mortised Stakes and Granite Hammers found in, . . . . .	377
Barrow-Stones, The, probably an old burial-place, . . . . .	471
Baugé, Battle of, . . . . .	448
Beacon Mounds at Loch Etive and Lochnell, . . . . .	103
Beads of Lignite, Donation of part of a Necklace of, found in a Cist in the Chambered Long Cairn at Yarhouse, Caithness, . . . . .	246
Bead of Vitreous Paste, Enamelled, found in the Broch of Bowermadden, Caithness, Donation of, . . . . .	247
—— of Earthenware, Ribbed, found near Glenluce, Donation of, . . . . .	357
Bell, inscribed, at the Parish Church of Kirkmaiden, Wigtonshire, . . . . .	586
Bennet (David), Donation by. Flint Spear-Head found at Gattaway, Abernethy, . . . . .	182
Bennie (James), on the Occurrence of Bovine Remains in the Ancient Drift of the Clyde, . . . . .	628
Berry (John), Donation by. "Trotcosy," or Hood, . . . . .	538
Bewick (Thomas), on British Wild Cattle, . . . . .	598
Bible printed at Edinburgh by James Watson, 1722, Folio, Donation of, . . . . .	222
Bilton, Yorkshire, Sculptured Stone Discovered at, . . . . .	177
Blair-Drummond Moss, . . . . .	34
—— Notes of Antiquities Discovered in, . . . . .	179
Bochastell, Dun of, . . . . .	36
Boethius (Hector), on Ancient Scottish Wild Cattle, . . . . .	605
Bone Bodkin found in the Broch of Old Stirkoke, Caithness, . . . . .	247
—— Button (?), found in an Urn at Murthly, . . . . .	269
—— Cave at Lower Warburton, St Cyrus, . . . . .	630
—— Disc, from Cinn Trolla, Donation of, . . . . .	56
—— Tools, from Cinn Trolla, Sutherlandshire, Donation of, . . . . .	55
<i>Bos longifrons</i> in Scotland, Notes on the, by Dr John Alexander Smith, . . . . .	587
—— found in Caithness, . . . . .	632
—— in Edinburghshire, . . . . .	624
—— in Forfarshire, . . . . .	631
—— in Haddingtonshire, . . . . .	626
—— in the Hebrides, . . . . .	634
—— in Kincardineshire, . . . . .	630
—— in Kirkcudbrightshire, . . . . .	624
—— in Lanarkshire, . . . . .	628
—— in Linlithgowshire, . . . . .	627
—— in Orkney, . . . . .	633
—— in Ross-shire, . . . . .	631
—— in Roxburghshire, . . . . .	623
—— in Stirlingshire, . . . . .	629

	PAGE
<i>Bos longifrons</i> , in Sutherlandshire, . . . . .	631
—— Wigtownshire, . . . . .	624
—— with horns, found in County Limerick, Ireland, . . . . .	622
—— Table of Measurements of Skulls of, . . . . .	613
—— Notice of Crania of, . . . . .	617
—— of Teeth of, . . . . .	619
—— Geological Range of, in Britain, . . . . .	634
—— Distribution of, . . . . .	640
<i>Bos primigenius</i> in Scotland, Notes on the, by Dr John Alexander Smith, . . . . .	587, 641
—— in Aberdeenshire, . . . . .	663
—— in Ayrshire, . . . . .	659
—— in Berwickshire, . . . . .	658
—— in Caithness, . . . . .	665
—— in Dumfriesshire, . . . . .	658
—— in Fifeshire, . . . . .	650, 660
—— in Galloway, . . . . .	644
—— in Kirkcudbrightshire, . . . . .	658
—— in Lanarkshire, . . . . .	659
—— in Orkney, . . . . .	666
—— in Perthshire, . . . . .	661
—— in Renfrewshire, . . . . .	659
—— in Roxburghshire, . . . . .	656
—— in Selkirkshire, . . . . .	654
—— in Sutherlandshire, . . . . .	665
—— Geological Range of, in Britain, . . . . .	667
—— Distribution of, . . . . .	673
Bowermadden, Caithness, Donation of Relics from Broch of, . . . . .	247
Bowmaker (Walter), . . . . .	17
Bridge of Allan, Ancient Mound at, . . . . .	39
Brodie (Rev. James), Note of the Excavation of some Tumuli at Melville Moor, . . . . .	151
—— Notice of a Collection of Flint Implements found at Fordoun, now presented to the Museum, . . . . .	499
Broch of Cinn Trolla, Sutherlandshire, Donation of Collection from, . . . . .	354
—— of Bowermadden, Caithness, . . . . . do. . . . .	247, 355
—— of Old Stirkoke, Caithness, . . . . . do. . . . .	247, 355
—— of Yarhouse, Caithness, . . . . . do. . . . .	355
—— of Brounaben, Caithness, . . . . . do. . . . .	245, 355
—— of Lingrow, Scapa, . . . . . do. . . . .	357
—— of Burrian, North Ronaldsay, Orkney, Donation of Stone with Incised Cross and Ogham Inscription from, . . . . .	366
—— North Ronaldsay, Notice of Excavations in, . . . . .	547

	PAGE
Brochs of Yarhouse, Brounaben, Old Stirkoke, and Dunbeath, Caithness,	
Notice of Excavations of, . . . . .	292
——— Notes on Evidences of Spinning and Weaving in, . . . . .	548
——— of Caithness, Donation of Collections from, obtained for the Rhind	
Excavation Committee, . . . . .	243
Brockly (R.), Donation by. Ornamented Stone Whorl found at Gourlaw,	
Roslin, . . . . .	249
Bronze Armlet, from Broch of Yarhouse, Caithness, . . . . .	243
——— Brooch, inscribed ISVS NAZAR, from Broch of Yarhouse, . . . . .	243
——— Celt, found in a Cave at Ardgour, . . . . .	182
——— Celts which have been tinned, Notice of . . . . .	428
——— Dagger, portions of, found at Callachally, Island of Mull, Dona-	
tion of, . . . . .	537
——— Daggers, probably tinned, . . . . .	433
——— Palstave found at Windshiel, Dunse, Donation of, . . . . .	79
——— Palstave found in a Moss at Watten, Caithness, Donation of, . . . . .	183
——— Patellas, Donation of, . . . . .	445
——— Pennanular Rings found at Auchtertyre, Morayshire, . . . . .	436
——— Pennanular Ring found at Benachie, Aberdeenshire, . . . . .	436
——— Pin, with open Semicircular Head, from Broch of Bowermadden,	
Caithness, Donation of, . . . . .	247, 359
——— Plates of, Hammer-marked, found in a Pictish Tower in Sutherland-	
shire, . . . . .	443
——— Pot found at Dodhead, Donation of, . . . . .	78
——— Lion-shaped Ewer, exhibited, . . . . .	384
——— Ring-Brooch found in South Uist, . . . . .	446
——— Rod found in the Broch of Old Stirkoke, Caithness, . . . . .	247
——— Spear-heads found at Auchtertyre, Morayshire, . . . . .	435
——— Tortoise Brooch found in Tiree, . . . . .	446, 532
——— Pin found in Tiree, . . . . .	446, 532
——— Tube found at Urquhart, Donation of, . . . . .	461
——— Figure of a Bull, Donation of, . . . . .	10
——— Grotesque Figure, Fox mounted on an Ass, from Fiesole, . . . . .	10
Brooch, Silver, inscribed, Donation of, . . . . .	535
——— Bronze, inscribed, . . . . .	536
Brooches, Himalayan and Kabyle, Notes on, . . . . .	419
——— Himalayan, exhibited, . . . . .	395
——— Kabyle, exhibited, . . . . .	395
Brown (A. J. Denniston), Donation by. Flag of White Silk, . . . . .	394
——— (J. R.), M. D., Hammer of Greenstone, exhibited by, . . . . .	383
——— (Rev. Thomas), Notes on Dunsinnane Hill, . . . . .	378
Broxmouth Ward, Donation of Stone Object found at, . . . . .	79

	PAGE
Bryson (Alexander), on the Rise of the Shores of the Firth of Forth, . . . . .	47
Buchan (John), Earl of, . . . . .	448
Buchanan (John), Notice of Roman Sculptures found at Arniebog, . . . . .	472
——— (Maurice), Grand-nephew of Sir John Stewart of Dernley, . . . . .	449
Buness, Shetland, Notice of Coin of Hakon V. of Norway, found at, . . . . .	273
Burmese Idol, Donation of, . . . . .	9
Burrian, Results of Excavations in the Broch of, . . . . .	547
Cadzow Forest, Wild White Cattle at, . . . . .	601
Cadzow, Notes of the Wild White Cattle of, . . . . .	613
Cairn, the Baron's, near Ledaig, Argyllshire, . . . . .	101, 408
——— of Ach-na-Cree, Excavation of, . . . . .	409
——— called Ossian's, . . . . .	99
——— Remains of, at Cleigh, . . . . .	106
——— Horned, at Ormiegill, Ulbster, Caithness, Donation of Relics found in, . . . . .	245
——— Long, enclosing two parallel rows of Cists, on the Cuff Hill, Beith, . . . . .	231
——— Round and Chambered, at Camster, Caithness, Donation of Relics found in, . . . . .	246
Cairns, Round and Boat-shaped, at Dunnet, Caithness, . . . . .	425, 427
——— Chambered, Sepulchral, in Caithness, Excavation of, . . . . .	292
——— of Small Broken and Burned Stones in Scotland and Ireland, . . . . .	296
——— near Loch Creran, . . . . .	89
——— in Urquhart, Notices of, . . . . .	256, 260
——— at Watten, Caithness, . . . . .	183
"Caledonian Mercury," Donation of three Volumes of, . . . . .	505
Campbell (Robert), Notice of the Discovery of Eight Silver Armlets in a Cist at Rattar, Dunnet, Caithness, . . . . .	422
——— (W. Watson), M.D., Donation by. Celt of whitish Sandstone found at Windshiel, Dunse, . . . . .	78
Camster, Caithness, Donation of Relics from Round Cairns at, . . . . .	246
Carfrae (Robert), Donation of Roman Coins by, . . . . .	58
Carriden, . . . . .	50
Carr (Ralph), Note on a Bronze Patella by, . . . . .	567
Cassie (James), Donation by. Padlock, from the Old Jail at Aberdeen, . . . . .	367
Castleary, Roman Fort at, . . . . .	477
Castlehill, Caithness, Chambered Cairn at, . . . . .	424
Castles of the Valleys of the Forth and Teith, . . . . .	29
Cattle, Ancient, of Scotland, Notes on, by Dr J. A. Smith, . . . . .	587
——— Origin of our Domestic, . . . . .	595
——— Ancient, of Great Britain, . . . . .	598
——— Notices of the, by early Authors, . . . . .	605



Celt of Greenstone found near Glenshee, Donation of, . . . . .	356
——— of Greenstone, Polished, found in Unst, . . . . .	242
——— of Sandstone, bulging in the Upper Part, found in Unst, Shetland, . . . . .	243
——— of Sandstone found at Windshiel, Dunse, Donation of, . . . . .	78
——— Large, found at Watten, Caithness, . . . . .	154
——— found in a Cairn at Glenshee, Donation of, . . . . .	154
Celts, Polished, found at Drumour, Noranside, Glenshee, Donation of, . . . . .	153
——— found at Auchterless, Notice of, . . . . .	161
——— Polished, found at Migvie, Donation of, . . . . .	393
——— of Stone, Donation of, . . . . .	10
Celt-like Implements found at Unst, Shetland, . . . . .	242
Chadwick (Major), Necklace of Beads found at Culbin Sands, exhibited by, . . . . .	80
——— ———— Donation of Beads by, . . . . .	155
Chalmers (Rev. Peter), Bequest by, . . . . .	5
Chalmers (John), Donation by. Collection from Kitchen-Midden on Dunsappie Crag, . . . . .	445
Chapels, Early, in Caithness, . . . . .	424
Chapelton, Ayrshire, Notice of Coins found at, . . . . .	271
Charm to cure Toothache, Donation of, . . . . .	57
Cist at Fallaws, Donation of Rubbing-Stone from, . . . . .	59
——— Egg-shaped, built with Boulders, at Ledaig, . . . . .	90
——— with Urn, at Clendrie, parish of Inch, Wigtownshire, . . . . .	571
Cists found at Ardoe, Aberdeenshire, Notice of, . . . . .	269
——— Group of, near Lauder, . . . . .	223
——— discovered at Carsecreuch, Wigtownshire, . . . . .	517
Clava, Standing Stones round the Cairns at, . . . . .	411
Clay Crucibles from Broch of Cinn Trölla, Sutherlandshire, Donation of, . . . . .	54
Clay Loom-Weights, found at Ravensby, Donation of, . . . . .	154
Clerk (Rev. Archibald), Donation by. Stone Mould for Rings, found at Kilmailie, Inverness-shire, . . . . .	248
Cochet (M. l'Abbe), Notice by, of Gallo-Roman Tetinæ, . . . . .	109
Cochrane-Patrick (R. W.), Notes on a Long Cairn, enclosing two parallel rows of Cists, on the Cuff Hill, Beith, . . . . .	231
——— Notice of a very rare type of the Half Plack of James II., by, . . . . .	287
——— Notes on Antiquities recently discovered in Ayrshire, . . . . .	385
——— Donation by. "Unpublished Varieties of Scottish Coins," 8vo, . . . . .	505
Coffer of Oak, with Stamped Plates of Pewter, Donation of, . . . . .	11
Coins recently found in Scotland, Notes of, . . . . .	508
——— Roman, First Brass, Donation of, by Robert Carfrae, . . . . .	58
——— Roman, found at Newstead, Roxburghshire, . . . . .	589
Coldoch, Broch of, . . . . .	37
Colonsay, . . . . .	82

	PAGE
Colvin (Rev. Dr), Donation by. Runic Ring found at Cramond, . . . . .	156, 459
Colvin (Peter), Donation by. Stone Hammers, Whorl, and Arrow Heads from Turriff, . . . . .	155
——— Donation by. Flint Arrow Heads found at Montblairy, Banffshire, . . . . .	504
Comb of Bone, with semicircular Back, found in South Uist, . . . . .	446
——— Double Margined, found in the Crannog of Loch Inch-Crindil, . . . . .	381
——— Long-handled, found in the Broch of Lingrow, Scapa, Orkney, . . . . .	360
——— small, with open semicircular Handle, from Broch of Bowermadden, Caithness, Donation of, . . . . .	247
——— of a Loom, <i>pecten textoris</i> , Description and Uses of, . . . . .	553
——— ———— References to, by Classical Writers, . . . . .	555
——— ———— Names in different Languages for, . . . . .	556
——— ———— Modern Form of the Implement, . . . . .	559
Combs, Eskimo, . . . . .	135
——— Indian, . . . . .	136
——— from Danish Shell Mounds, . . . . .	136
——— found with Roman Coins, . . . . .	136
——— Irish, . . . . .	136
——— Maori, . . . . .	140
——— of Bone, Long-handled, from Shell-Heap at Hillswick, Shetland, Donation of, . . . . .	56
——— for the Toilet and for the Loom, . . . . .	550
——— Long-handled, found with Roman Remains, . . . . .	552
——— ———— Materials of, . . . . .	124
——— ———— General Form of, . . . . .	124
——— ———— Peculiar Forms of, . . . . .	125
——— ———— Characteristics of Teeth of, . . . . .	126
——— ———— Microscopical Structure of, . . . . .	128
——— ———— Manufacture of, . . . . .	128
——— ———— Ornamentation of, . . . . .	133
——— ———— Localities of, . . . . .	125, 135
——— ———— Uses of, . . . . .	139, 140
Cooke (Thomas Etherington), Notice of a Cross Shaft at Arthurlee, Ren- frewshire, . . . . .	451
Coughtrey (Millen), Notes on Long-handled Combs, &c., found in a Kitchen Midden at Hillswick, Shetland, . . . . .	118
——— Donation by. Long-handled Combs from Hillswick, Shetland, . . . . .	56
Cowan (James), Donation by. Portion of Egyptian Bas-Relief, . . . . .	462
Crannog in Loch Inch-Crindil, Notice of the Examination of, . . . . .	388
Crannogs of Wigtownshire, Notes of, . . . . .	368
Cremation of the Body of a Norse Chief, Ceremonies at, . . . . .	519
——— Origin and Continuance of, . . . . .	526-532

	PAGE
Cremationn among the Greeks and Romans, . . . . .	527-529
— among the Esthonians, . . . . .	526
— among the Pagan Franks, . . . . .	527
— of the body of the Maharajah of Judpore, . . . . .	530
Crogans from the Island of Harris, Notices of, . . . . .	205
Cromdale, Iron Dagger Blade from, . . . . .	10
Cromlechs at Achnacridhe-beg, . . . . .	99
Crosses, Dedication, Elgin Cathedral, . . . . .	579
— Pluscarden Abbey, . . . . .	580
— Parish Church, Crail, . . . . .	580
Crucibles of Clay, Donation of, . . . . .	54
Culbin, Necklace of Beads found on Sands of, . . . . .	155
Culdee Establishment at Monifieth, . . . . .	72
Cullen, Bede-house of, . . . . .	281
— Three Kings of, . . . . .	275
— Notice of Antiquities of, . . . . .	274
Cuming (H. Syer), on Early Tetinæ, . . . . .	112
Cumbernauld, Wild White Cattle at, . . . . .	600
— Roman Legionary Tablet discovered at, . . . . .	178
Cunningham (D.), Hammer of Granite exhibited by, . . . . .	383
Cunninghame (George Corsane), Donation of Etruscan Vases by, . . . . .	220
Cup-marked Stones at Glenhead, Doune, . . . . .	39
Cup, Oval Wooden, of one piece, found in Dalvaird Moss, Donation of, . . . . .	357
Dagger Blade of Iron from Haughs of Cromdale, Donation of, . . . . .	10
Dalhousie (Earl of), Donation by. Rubbing Stone from Cist at Fallaws, . . . . .	59
Dalrymple (Charles E.), Donation through, of Sixty-three Negatives of Historical Portraits, . . . . .	221
— Notice of the Examination of a Crannog in Loch Inch-Crindil, by, . . . . .	389
— Donation through. Collection of Negatives of Historical Portraits, . . . . .	355
Dalvaird Moss, Glenluce, Wooden Cup found at, . . . . .	357
Danford (Charles G.), Donation by. Six Folios of Abyssinian Gospels, . . . . .	11
Dawkins (W. S. Boyd), M.A., on Ancient British Cattle, . . . . .	635, 669, 674
Dawson (Provost), Linlithgow, Donation by. Plaster Medallion found in "Cornwall's Lodgings," Linlithgow, . . . . .	79
Dernley, Sir John Stewart of, . . . . .	448
Diarmid and the Boar, Legend of, . . . . .	103
Dick (John), Donation by. "Here and There in England," 8vo, . . . . .	249
Dickson (Messrs John and Sons), Donation of Gun Flints by, . . . . .	461
Dickson (Walter), Donation by. The "Caledonian Mercury," 1753-57, . . . . .	505
Dodhead, Donation of Bronze Pot and Stone Ball found at, . . . . .	78
Dornoch, Dumfriesshire, Notes of Coins found at, . . . . .	508

	PAGE
Drumlanrig, Wild White Cattle at, . . . . .	601
Drummond (James), R.S.A., Notes of Early Monumental Art in the High-lands, . . . . .	24
——— Notes on the Value of Rubbings as compared with Drawings, . . . . .	68
——— Notice of a Highland Target, with Cognisance of the Lord of the Isles, by, . . . . .	185
——— Notice of a Highland Powder Horn, by, . . . . .	503
Drummond (Henry Home), Notice of a Collection of Antiquities found in Blair Drummond Moss, . . . . .	179
Drumore, Sculptured Stone built into the Wall of the Mill at, . . . . .	582
Dryden (Sir Henry), Donation by. "Transactions of the Architectural Institute of Scotland," . . . . .	58
——— Donation by. Two Portfolios of Plans, Sketches, and Measurements of Brochs, Stone Circles, and Lines of Standing Stones in North of Scotland, . . . . .	444
Duff (John), of Muldavit, . . . . .	280
Duff (Andrew), of Muldavit, . . . . .	280, 674
Duke (Rev. William), Notice of St Vigean's Church, and Sculptured Stones recently discovered at, . . . . .	481
Dun Cathich, . . . . .	103
——— Bhaile an Righ, . . . . .	87, 396
——— Macuisneachan, . . . . .	396
——— an Selma, . . . . .	89
Dunbar, Notes of Coins found at, . . . . .	508
Dundas (Lieut. Colin M.), R.N., Donation by. Two Spear Heads of Obsidian from Easter Island, . . . . .	11
——— Note on Easter Island, by, . . . . .	116
Dundas (Miss Ann), Donation by. MS. Volume relating to Teinds, &c., . . . . .	221
Duns near Coldoch, . . . . .	38
——— in Valleys of Forth and Teith, . . . . .	29
Duns (Professor), Donation by. Five Indo-Scythic Coins, . . . . .	249
Dunsinnane Hill, Notes on, . . . . .	378
Dunstaffnage, . . . . .	82, 83
Duntroon, Vitriified Fort at, . . . . .	407
Earthenware Tetinæ, Donation of, . . . . .	6
——— Patellæ, . . . . .	6
——— Lamps, . . . . .	6
——— Kabyle, Double Jug of, . . . . .	9
Easter Island, Note of the Discovery of Carved Planks in, . . . . .	116
——— Donation of Spear Heads of Obsidian from, . . . . .	11
Edinburgh in Early Times, Notes on, . . . . .	223



	PAGE
Edmonston (Thomas), of Bunes, Notice of Excavations in the Island of Unst, by, . . . . .	283
——— Donation by. Silver Coin of Hakon V., dug up in Unst, Shetland, . . . . .	249
——— Donation by. Collection of Stone Vessels, Implements, &c., from Shetland, . . . . .	355
Elk, the American, Characters of, . . . . .	302, 307
Elk ( <i>Cervus alces</i> ), Notices of the Discovery of the Remains of, in Scotland, . . . . .	297
——— in Berwickshire, . . . . .	297, 314, 324
——— in Duddingston Loch, . . . . .	312
——— in Forfarshire, . . . . .	314
——— in Perthshire, . . . . .	317
——— in Sutherlandshire, . . . . .	322
——— in Haddingtonshire, . . . . .	325
——— in Roxburghshire, . . . . .	327
——— in Selkirkshire, . . . . .	331
——— in Peeblesshire, . . . . .	332
——— in England, . . . . .	332
——— in Wales, . . . . .	339
——— in Ireland, . . . . .	340
——— Geological Range of, . . . . .	341
——— Geographical Range of, . . . . .	342
——— Irish ( <i>Megaceros Hibernicus</i> ), Notes on Remains of, found in Scotland, . . . . .	345
——— ——— in Ayrshire, . . . . .	346
——— ——— in Roxburghshire, . . . . .	347
Elliot (Sir Walter). Donations through, . . . . .	79
Elphinstone (Bishop), Notice of the probable Author of the unpublished History of Scotland, attributed to, . . . . .	447
Emery (Nicolas), Notice of permissions given to, to make Jettons with the Arms of the Queen of Scots, . . . . .	506
Estonians, Funeral Ceremonies of, . . . . .	526
Etive, Loch, Descriptive List of Antiquities near, . . . . .	396
Etruscan Vase, Donation of, . . . . .	7
——— Vases, Donation of, . . . . .	220
Evans (John), Donation by. Notes of Hoards of Coins from "Numismatic Chronicle," . . . . .	505
Faa (Johnny), Notice of supposed Charter Chest of, . . . . .	264
Falconer (William), Donations by. Dissertation on St Paul's Voyage, &c., . . . . .	53
Fallaws, Donation of Rubbing Stone from Cist at, . . . . .	59
Farquharson (Francis), Donation by. Urn found in a Cairn at Migvie, . . . . .	366
Farskan (Cullen), Ancient Church of the Virgin at, . . . . .	275
Feeding Bottles for Infants, or Ancient Tetinæ, . . . . .	106

	PAGE
Fell (Loch), Wigtownshire, Island and Causeway in, . . . . .	377
Ferguson (James), Donation of Holograph Ticket of Admission to Lectures of, in 1768, . . . . .	57
Fiesole, Bronze Grotesque from, . . . . .	10
Fitz-Gibbon (A.), Donation by. Unpublished Geraldine Documents, 8vo, . . . . .	58
Flag of White Silk, Donation of, . . . . .	394
Flint Arrow Head, Leaf-shaped, found in the Horned Cairn, Garrywhin, Caithness, Donation of, . . . . .	246
——— Serrated, found at West Mains of Calder, . . . . .	248
——— found at Turriff, Donation of, . . . . .	155
——— Arrow Heads found at Urquhart, Elginshire, . . . . .	239
——— Donation of, . . . . .	11
——— found in Horned Cairn at Ormeigill, Ulbster, Caithness, . . . . .	245
——— Celts found at Urquhart, Elginshire, . . . . .	238
——— Core from Broch of Yarhouse, Caithness, . . . . .	243
——— Implements found in Urquhart, Notices of, . . . . .	253, 261
——— Implements found at Urquhart, Donation of, . . . . .	461
——— Implements found at Fordoun, Kincardineshire, Donation of, . . . . .	461
——— Knife from Round Cairn at Camster, Caithness, . . . . .	246
——— Knife found at Urquhart, Elginshire, . . . . .	239
——— Knife found at Strachur, Argyllshire, . . . . .	239
——— Knife found at Camster, Caithness, . . . . .	239
——— Knife found in Horned Cairn at Ormeigill, Ulbster, Caithness, . . . . .	245
——— Spear-head found at Gattaway, Abernethy, Donation of, . . . . .	182
Fordun's Chronicle, Notice of Additional MSS. of, by W. F. Skene, . . . . .	13
——— Wolfenbittel, MS. of, . . . . .	13
Forrest (Robert), Donation by. The Joughs, with their Padlock and Key, from the Parish Kirk of Clova, Forfarshire, . . . . .	155
Forrest (James), Notice of the Circular Foundations at the Gallow-hill, Auchterless, . . . . .	157
Forsyth (John), Donation by. Part of Bronze Spear-head found in Glen- trool, . . . . .	357
Forth, Alexander Bryson on Rise of Shores of, . . . . .	47
Franks (Augustus W.), Notice of Permissions given to John Acheson to make Dies with the Portrait of Queen Mary, and to Nicolas Emery to make Jettons with the Arms of Mary, Queen of Scots, at Paris, 1553, . . . . .	506
Fraser (William), Donation through. Memoirs of Maxwells of Pollok, 4to, . . . . .	79
Funeral Customs of the Early Christians, . . . . .	530
——— of the Swedes, . . . . .	530
——— of the Lapps, . . . . .	530
——— of the Norsemen, . . . . .	520
——— of the Estonians, . . . . .	526

	PAGE
Funeral Customs of the Greeks and Romans, . . . . .	527-529
Gardyne (Colonel), Donation by. Urn, Stone Implements, and portions of a Bronze Knife-Dagger found at Callachally, Glenforsa, Island of Mull, . . . . .	537
Gargunnoch, Kier of, . . . . .	34
——— Peel of, . . . . .	35
Garra (Captain Don Ignacio L.), Report on Easter Island by, . . . . .	116
Ghegan, the, Derivation of the Name, . . . . .	626
Giants' Graves near Levenwick, Shetland, . . . . .	215
Gibson (W. G.), Notice of Elfin Pipes by, . . . . .	288
Glenalmond, Notice of an Ancient Structure near, . . . . .	291
Glenelg, Pictish Towers in, . . . . .	38, 42
Glenhead, near Doune, Standing Stones at, . . . . .	39
Gleniron, Glenluce, Whorl found at, . . . . .	357
Glenluce, Celt found near, . . . . .	357
Glenshee, Donation of Celts from, . . . . .	154
Glenshee (Drumour), Forfarshire, Stone Celts found at, . . . . .	174
Goodsir (Professor), Skeleton of Hamilton Ox, purchased by, . . . . .	614
Gordon (Lady Catherine), Wife of Perkyn Warbeck, . . . . .	546
Gordon (Elisabeth), Wife of Alexander Ogilvy of Deskford, . . . . .	278, 281
Gordon (Miss), Donation by. Stone with Cavities in its flat faces, . . . . .	220
Goudie (Gilbert), Notes on the Excavation of a Broch at Levenwick, Shetland, . . . . .	212
Govan Hills, Stirling, . . . . .	33
Grampian Club, Donation by. "The Jacobite Lands of Gask," 8vo, . . . . .	222
Grant (William), Donation by. Stone Sinker, with the figures 1679, found underneath Leith Pier, . . . . .	394
Greig (James Gibson), Donation of Books by, . . . . .	184
Grieve (David), Notes on Shell-Heaps at Inveravon, . . . . .	45
——— Notes on a Kitchen Midden at Inchkeith by, . . . . .	452
——— Donation by. Thirteen Pennies of Alexander III., an unpub- lished Variety, . . . . .	249
——— Donation by. Collection from Kitchen Middens at Inchkeith, . . . . .	444
——— Donation by. MS. Deed of Legitimation of James Abernethy, . . . . .	79
Gunflints, Donation of, . . . . .	461
Gunn (Captain Alexander), Donation by. Bronze Palstave found in a Moss at Watten, Caithness, . . . . .	183
Haddan (William), His Notices of the Inscribed Stones at Kirkmadrine, . . . . .	573
Hammermen, Records and Stamps of, at Edinburgh, . . . . .	268
Hammer Stones from Cinn Trölla, Sutherlandshire, Donation of, . . . . .	55
Hammer Stone found on the Lid of a Stone Cist in a Cairn on the Warth Hill of Canisbay, Caithness, . . . . .	247

	PAGE
Hamilton (Rev. Z. M.), Donation by. Three Stone Vessels found in a Moss in Unst, Shetland, . . . . .	538
Handcuffs from Dornoch Jail, Donation of, . . . . .	79
Hannah (Rev. J.), Notice of an Ancient Structure near Glenalmond, . . . . .	291
Hardhead of Francis and Mary, 1551, Donation of, . . . . .	539
Hare, as a Prefix in Place Names, . . . . .	470
Harefaulds, the, Lauder, Berwickshire, Notice of, . . . . .	465
Harris (Peter), Donation by. Polished Celt found at Ervie, Kirkeudbrightshire, . . . . .	460
Harris (Robert), Donation by. Written Ticket to Lectures on Experimental Philosophy by James Ferguson, Edinburgh, 1768, . . . . .	57
Hassell (Samuel Talbot), Donation of China Plate by, . . . . .	182
Haugy-Goe, Dunnet, Caithness, Chambered Cairn at, . . . . .	427
Hay (Helen), of Muldavit, . . . . .	280
Hay (John), of Tolyboyll, . . . . .	279
Henry VII., Notice of an Original Document relating to the Invasion of Scotland by, . . . . .	540
Heron, Loch, two Artificial Islands in, . . . . .	378
Herrit's Dyke, Berwickshire, . . . . .	469
Hillswick, Shetland, Kitchen Midden at, . . . . .	118
Himalayan Brooches exhibited, . . . . .	395
Hindmarsh (William), on Wild Cattle of Chillingham, . . . . .	601, 604
Historical Portraits, Donation of Sixty-three Negatives of, . . . . .	221
Holecroft, Kirkeudbrightshire, Notes of Coins found at, . . . . .	508
Hollar, Rare View of Edinburgh by, . . . . .	223
Hour-Glass from Bathgate Church, Donation of, . . . . .	11
Howe of Hoxa, South Ronaldsay, Thorfinn, Earl of Orkney, buried in, . . . . .	361
Human Jaw, Fossil, Donation of, . . . . .	11
Huntingdon (David), Earl of, Tombs of Two Children of, at Lindores, . . . . .	210
Hut Circles enclosed by Stone Wall at Lauder, . . . . .	465
—— at Linhope, in the Cheviots, . . . . .	470
Ibn Fozlan, Narrative by, of the Ceremonies attending the Incremation of the Dead Body of a Norse Chief, . . . . .	520
Iceland, Notice of a Runic Door from, . . . . .	458
Inchkeith, Notes on a Kitchen Midden at, . . . . .	452
—— Donation of Collection from Kitchen Midden at, . . . . .	444
Inch-Crindil, Loch, Crannog in, . . . . .	378
Inveravon Tower, . . . . .	50
—— Shell Heaps at, . . . . .	45
Iona, Buildings and Monuments of, . . . . .	28
—— Committee on Ruins and Monuments of, . . . . .	52



	PAGE
Iron Axe-Head or Mattock found near Lugat Castle, . . . . .	11
——— Dagger Blade from Haughs of Cromdale, Donation of, . . . . .	10
——— Dagger Blade from Cinn Trölla, Sutherlandshire, . . . . .	56
——— Knife from Cinn Trölla, Sutherlandshire, Donation of, . . . . .	56
——— Relics found in Carluke Parish, Notes of, . . . . .	512
——— Spear-Head found in a Cist at Watten, Caithness, . . . . .	183
——— Socketed Celt or Chisel from Cinn Trölla, Sutherlandshire, . . . . .	56
——— Stirrup-like Object, Donation of, . . . . .	10
 Jardine (Robert), Donation by. Ornamented Powder Horn, . . . . .	 534
Jeffrey (James), Donation by. Celt and Stone Ball, with six projecting Discs, . . . . .	393
Jeffrey (John), Donation by. Stone Ball found at Broxmouth Ward, and Remains from Kitchen Midden at Dunbar, . . . . .	 220
Jervise (Andrew), Notice of an Underground Chamber at Tealing, . . . . .	548
——— Notice of Antiquities of Cullen by, . . . . .	275
——— Additional Note by, on the Antiquities of Cullen, . . . . .	674
Joass (Rev. J. M.), Notice of Excavation of Pictish Towers in Sutherland- shire, . . . . .	 60
——— Donation by. Charm to cure Toothache, written and sold by Kate M'Aulay, Lochcarron, Ross-shire, in 1855, . . . . .	 57
——— Donation by. Collection from Broch of Cinn Trölla, . . . . .	53, 354
Johnston (Thomas B.), Donation by. Three Volumes of Billets and Circulars of the Society, . . . . .	 394
——— Donation by. Three War Clubs and Three Long Spears, . . . . .	382
Johnston (John), M.D., on Ancient British Wild Cattle, . . . . .	607
Jones (Morris Charles), Donation by. "The Abbey of Ystrad Marchell," 8vo, . . . . .	222
Jougs, the, from the Parish Kirk of Clova, Forfarshire, Donation of, . . . . .	155
Jovius (Paulus), on Ancient British Wild Cattle, . . . . .	606
 Kabyle, Double Jug of Earthenware, Donation of, . . . . .	 9
Karnak, Donation of Sculptured Fragments from the Temple at, . . . . .	6
Keledei of Monifieth, . . . . .	72
Keller (Dr Ferdinand), Donation by. Cast of a Marked Stone, . . . . .	11
Kilbirnie, Loch of, Bronze Lion-shaped Ewer and Bronze Pot found in, exhibited, . . . . .	 384
King (Lieut.-Col. W. Ross), Donation by. Aboriginal Tribes of Nilgiri Hills, 8vo. . . . .	 59
Kinord, Aberdeenshire, Underground Structure at, . . . . .	455
Kintyre, Argyllshire, Notes on the Ecclesiastical Antiquities of, . . . . .	227
Kippen, Kier of, . . . . .	35
Kirk o' Banks, Rattar, Caithness, Discovery of Eight Silver Rings in a Cist at, . . . . .	422
Kirkmadrine, Wigtownshire, Notice of Inscribed Stones at, . . . . .	568

	PAGE
Kitchen Midden on Dunsappie Crag, Donation of Collection from, . . .	445
—— at Inchkeith, Donation of Collection from, . . .	444
—— at Inchkeith, Notes on a, . . .	452
—— at Hillswick, Shetland, Description of, . . .	118
—— at Dunbar, Donation of Remains from, . . .	220
—— in Urquhart, Elginshire, . . .	251
Knox (Dr Robert), on the Wild Ox of Scotland, . . .	602
—— Skull of White Ox in the Collection of, . . .	613
Kyloe or Highland Cattle, Sketch of, . . .	640
Lady Associate, Election of, . . .	52
Laidlay (J. W.), Donation by. Collection from Ancient Dwelling at Seacliff, . . .	4
Laing (David), Notes on Edinburgh in Early Times, with Illustrations, . . .	223
—— Notice of an Original Privy Seal Document relating to the Invasion of Scotland by King Henry Seventh, . . .	540
Laing (Alexander), Notes on Lindores Abbey, . . .	208
Lake Dwellings on an Island in Lochnell, . . .	105
—— at Ledaig, . . .	93
—— in the Moss of Ledaig, . . .	417
Lamps, Roman, Donation of, . . .	7
—— Bronze, Donation of, . . .	7
Lanark, Notes of Coins found at, . . .	508
Lauder, Opening of a Group of Cists near, . . .	223
Leadon Figures, Two Grotesque, Donation of, . . .	11
Ledaig, Mound and Cist at, . . .	90
Legion, the Second, Character of their Sculptures, . . .	475
Leith Harbour, Notes of Coins found at, . . .	508
Lefroy (Major-General), Donation by. Photograph of Bronze Ornament bearing a Runic Inscription, found at Greenmouth Castle, County Louth, . . .	221
Leslie (Chas. Stephen), Donation by. "Historical Records of the Family of Leslie," 3 vols. 8vo, . . .	394
Leslie (John), Bishop of Ross, on Ancient Scottish Wild Cattle, . . .	605
Levenwick, Notes on the Excavation of a Broch at, . . .	212
Lindores Abbey, Notes on, . . .	208
—— Donation of Relics found at, . . .	221
Linhope in the Cheviots, Circular Huts at, . . .	470
Lismore, . . .	89
Livingstone (Josiah), Donation by. Collection of Pottery and other Articles found at Wapping, . . .	180, 354
Loom, Comb of the, Ancient and Modern, . . .	553-559
—— Weights found in Scotland and Switzerland, . . .	557
—— of Clay found at Ravensby, Barry, Forfarshire, . . .	154, 175

	PAGE
Lonsdale (R.), Donation of Autographs by, . . . . .	393
Lothian (Marquis of), Stone Mould exhibited by, . . . . .	462
Lybster, Reay, Caithness, Chapel at, . . . . .	426
Macadam (Robert), Donation by. Iron Spear Head found in a Cist at Watten, . . . . .	183
Macadam (Dr Stevenson), Analysis of the Beads found at the Culbin Sands, . . . . .	81
——— Analysis of Crust from Infant's Feeding-Bottle by, . . . . .	115
——— Analysis of Tinned Bronze Celts by, . . . . .	430
Machermore Loch, Spear Head of Flint found in, . . . . .	367
——— Crannogs in, . . . . .	368
Mackenzie (Keith Stewart), Medallions exhibited by, . . . . .	384
Mackenzie (James), Donation by. Portions of the State Bed of Amisfield Castle, . . . . .	462
MacLagan (Miss C.), Notes on the Round Castles of the Valleys of the Forth and Teith, . . . . .	29
——— Notes of a Roman Sculptured Legionary Tablet discovered at Cum-bernauld, . . . . .	178
Maclaren (Charles), on Inveravon Shell Heaps, . . . . .	47
Maclean (Alexander), Donation by. Oval Wooden Vessel found in a Moss at Ardgour, . . . . .	220
——— Donation by. Flat Bronze Celt found in a Cave at Ardgour, . . . . .	182
Macleod (Rev. Dr Norman), Donation by. Tortoise Brooch and Bronze Pin found in the Island of Tiree, . . . . .	533
Macpherson (Rev. James), Donation by. Hammer-Stones and Antlers of Red-deer found in the Churchyard of Canisbay, the site of an Ancient Broch, . . . . .	248
M'Bain (Dr James), R.N., on Remains from an Ancient Structure at Nisibost, Harris, . . . . .	634
——— List of Fauna from a Kitchen Midden at Inchkeith by, . . . . .	453
M'Connell (John), Donation by. Polished Stone Celt found at Chapelheron, near Whithorn, . . . . .	445
M'Lachlan (Dr Thomas), Account of a MS. of the Story of the Sons of Uisneach in the Advocate's Library, . . . . .	407
M'Leod Memorial Stone, . . . . .	25
M'Luckie (J. R.), Donation by. Account of Arthur's Oon, 12mo, . . . . .	58
Manuscript Deed of Legitimation of James Abernethy, 1568, Donation of, . . . . .	79
Mary Queen of Scots, Entries in a Register at Paris, of date 1553, of Per-missions given to make Dies with Portrait of, and Jettons with Arms of, . . . . .	506
Marrow Bones, Splitting of, . . . . .	96
Maxwell (Sir W. Stirling), Donation by. Memoirs of the Maxwells of Pollok, . . . . .	79

	PAGE
Medical Officer, Roman, Donation of Tombstone of, . . . . .	7
Medicine Stamps, Roman, Donation of Casts of, . . . . .	7
Melville Moor, Excavation of Tumuli at, . . . . .	151
Mercer (Robert), Donation by. Two Bronze Patellas, . . . . .	445
——— Donation by. Old Padlock and Key, . . . . .	182
Merewether (Henry), Donation by. Chinese Razor, and "Diary of a Dean," 8vo, . . . . .	462
Michie (Rev. J. G.), Notice of an Underground Structure at Kinord, Aberdeenshire, by, . . . . .	455
Milne (Admiral Sir Alexander), Roman Remains and Bones of Oxen, &c., found at Inveresk, Presented by, . . . . .	624
Milne-Home (David), Notice of Circular Huts enclosed by a Stone Wall near Lauder, . . . . .	465
Mitchell (Arthur), M.D., Notice of Inscribed Stones at Kirkmadrine, by, . . . . .	569
——— Remarks on Captain Garra's Report on Easter Island, . . . . .	117
——— Notice of the Contents of an Urn found at Murthly, . . . . .	268
Mochrum Loch, Rectangular Ruins in, . . . . .	378
Monifieth, Kirk of, . . . . .	71
——— Abthane, Lands of, . . . . .	72
——— Donation of Sculptured Stones by Minister and Heiritors of, . . . . .	5, 59, 71-73
Montfaucon on Tetinæ, . . . . .	108
Morrison (Rev. James), Donations by. Collections of Flint Implements found at Meft and other localities in Urquhart, . . . . .	238, 355, 461
——— Notice of Remains of Early Antiquities in Urquhart, . . . . .	250
Moss, Age and Growth of, . . . . .	90
——— the Black, . . . . .	90
Mould of Clay for Casting Bronze Pins, found in the Broch of Lingrow, Scapa, Orkney, . . . . .	359
Murdoch, Duke of Albany, . . . . .	34
Murdoch's Knowe, an Ancient Dun, . . . . .	33
Murthly, Notice of the Contents of an Urn found at, . . . . .	268
Neish (James), Donation of Sculptured Stones from Monifieth through, . . . . .	59
——— Note of a Donation of Four Sculptured Stones from Monifieth, Forfarshire, by, . . . . .	71
Newstead, Roxburghshire, Roman Remains found at, . . . . .	588
——— <i>Bos longifrons</i> found at, . . . . .	592
Nilsson (Professor), on <i>Bos longifrons</i> , . . . . .	594, 618, 621, 640
——— on <i>Bos frontosus</i> , . . . . .	595, 597
——— on <i>Bos primigenius</i> , . . . . .	646, 667, 672, 673
Norsemen on the Volga, Funeral Customs of, . . . . .	520



	PAGE
Ogham Inscription on Stone with Incised Cross, found in the Broch of Burrian, . . . . .	366
Ogilvy (Alexander), of Deskford, . . . . .	278, 281
Ogston (Alexander), Notice of Cists and Urns found at Ardoe, by, . . . . .	269
Omond (Rev. J. R.), Donation through, . . . . .	5
Ossian's Cairn, . . . . .	99
Owen (Professor), on Ancient British Cattle, . . . . .	592, 595, 596, 597, 634, 662
Patella, Earthenware, from an Etruscan Tomb at Cumæ, Donation of, . . . . .	6
——— Small, Donation of, . . . . .	7
Peach (Charles William), Donation by. Hammer-Stone and Stone with Circular Hollows, from the Broch of Old Stirkoke, Caithness, . . . . .	248
Peacock (Edward), Notices from Original Documents of John Aynsley, . . . . .	167
Peat, Remarks on Age and Growth of, by Dr R. Angus Smith, . . . . .	90
Pebble pierced with Hole, from Broch of Yarhouse, Caithness, . . . . .	232
——— of Quartzite, with Central Depression, from Cinn Trölla, Sutherland- shire, Donation of, . . . . .	55
Pencaitland, Donation of Large Bead of Shale found at, . . . . .	11
Peru, Compressed Skull and Pottery from, exhibited, . . . . .	233
Peruvian Fish-Spear and Border of Grave-Cloth, Donation of, . . . . .	11
——— Antiquities, Notice of some, . . . . .	234
Petrie (George), Notice of Brochs or Round Towers of Orkney, . . . . .	60
——— Donation by. Collection from the Broch of Lingrow, Scapa, Orkney, . . . . .	357
——— Donation by. Tooth of Sperm Whale, found in the Howe of Hoxa, South Ronaldsay, Orkney, . . . . .	360
Philæ, Donation of Sculptured Fragment from the Temple at, . . . . .	6
Pin of Bronze, found in the Broch of Bowermadden, Caithness, . . . . .	359
Pipe Case of Ebony, Donation of, . . . . .	504
Pluscarden, Priory of, . . . . .	450
——— Book of, . . . . .	450
Pollok, Memoirs of the Maxwells of, by W. Fraser, Donation of, . . . . .	79
Portraits, Historical, Donation of Negatives of, . . . . .	355
Pottery from Broch of Cinn Trölla, Sutherlandshire, Donation of, . . . . .	54
Powder Horn engraved with the Monogram of Sir George Mackenzie, Notes on, . . . . .	503
——— Ornamented, Donation of, . . . . .	534
Purdie (Andrew), Donation by. Serrated Arrow Head of Flint, found at West Mains of Calder, . . . . .	248
——— Donation by. Ring of Shale, found at West Mains, West Calder, . . . . .	538
Quaich, Wooden, Hooped, Donation of, . . . . .	10
Quartz Pebbles in Ach-na-cree Cairn, . . . . .	415

	PAGE
Queckett (Professor), Jaw of <i>Bos longifrons</i> determined by, . . . . .	619
Quern found in Dun Macuisneachan, . . . . .	86
Querns, Donation of, . . . . .	9
——— from Broch of Cinn Trölla, Sutherlandshire, Donation of, . . . . .	53
——— found in the Moss of Connel, . . . . .	90
 Raine (Canon James), Notice of Sculptured Stone found at Bilton, Yorkshire, . . . . .	 177
Ramsay (Nicholas), Grandfather of the First Earl of Dalhousie, . . . . .	587
Ranken (D. R.), Notes of Iron Relics found at Carluke, . . . . .	512
——— Notices of Major-General William Roy, from the Parish Registers of Carluke, . . . . .	562
Rattar, Dunnet, Caithness, Silver Penannular Rings found in a Cist at, . . . . .	422
Razor, Chinese, Donation of, . . . . .	462
Reafirth, Shetland, Origin of the Name, . . . . .	362
Reid (Peter), Donation by. Cast of Old Highland Brooch, . . . . .	538
Reindeer, Portions of Antlers of, from Cinn Trölla, Sutherlandshire, Donation of, . . . . .	56
——— found in the Broch of Yarhouse, . . . . .	244
Rhinoceros Horn found in a Marl Pit at Forfar, . . . . .	636
Ring of Shale found at West Calder, Donation of, . . . . .	538
Rings of Shale or Lignite, Donation of, from Broch of Cinn Trölla, Sutherlandshire, . . . . .	54
Robb (James), Donation by. Piece of Lead Piping found at Haddington, . . . . .	156
Rogers (Rev. Charles), Donation by. Poems of Sir Robert Aytoun, 8vo, . . . . .	184
——— Donation by. "The Scottish Branch of the Norman House of Roger," 8vo, . . . . .	462
Rogers (Rev. Dr), Donation by. "Staggering State," &c., 8vo, . . . . .	539
Roman Altars, Sixteen, discovered at Maryborough, Cumberland, . . . . .	475
——— Consular and Family Coins, Descriptive Catalogue of, . . . . .	568
——— Lamps, Donation of, . . . . .	6
——— Medicine Stamps, Donation of Casts of, . . . . .	7
——— Medical Officer, Donation of Tombstone of, . . . . .	7
——— Milestone deposited in the Museum, . . . . .	464
——— Sculptured Legionary Tablet found at Carriden, Linlithgowshire, . . . . .	476
——— Sculptured Legionary Tablet, Fragments of, found at Arniebog, Notice of, . . . . .	472
——— Wall, between Forth and Clyde, Stations and Forts along the Line of the, . . . . .	478
Romilly (Lord), Master of the Rolls, Donation of Calendars and Chronicles by, . . . . .	367
Rosehill (Lord), Notice of the Opening of a Group of Cists near Lauder, by, . . . . .	223
Roy (Major-General William), Notices of, from the Parish Registers of Carluke, . . . . .	562

	PAGE
Rubbing-Stone from Cist at Fallaws, Donation of, . . . . .	59
Runic Inscription on a Bronze Ornament found at Greenmouth Castle, County Louth, Donation of Photograph of, . . . . .	221
——— Door from Iceland, Notice of, . . . . .	458
——— Ring from Cramond, Notice of, . . . . .	458
——— Ring found at Cramond, Donation of, . . . . .	156
Rust (Rev. James), Donation by. "Druidism Exhumed," 8vo, . . . . .	80
Russell (Patrick), . . . . .	14
Russell (Rev. James), Donation by. Sinkstone for a Handline, . . . . .	382
Rutmeyer (Professor), on <i>Bos brachyceros</i> , &c., . . . . .	641, 668
Saddell, Drawings of Antiquities at, . . . . .	27
——— Criticisms on Drawings of Antiquities at, . . . . .	61
St Columba Church, near Dun Macuisneachan, . . . . .	82
St Cornac's Chapel, Eilanmor, . . . . .	27
St Martin's Cross, . . . . .	26
St Medan's Chapel Co', Wigtownshire, . . . . .	583
St Modan's Church, Ardochattan, . . . . .	102
St Oran's Churchyard, . . . . .	24
——— Chapel, . . . . .	25, 26
St Regulus, . . . . .	71
St Vigean's Church, Forfarshire, Sculptured Stones discovered at, . . . . .	481
Samian Ware Cup, Donation of, . . . . .	7
Scarabei of Clay, Donation of, . . . . .	6
Scotland, Document relating to the Invasion of, by Henry VII., . . . .	540
——— Documents Illustrative of the History of, published by the Lord Clerk Register, Donation of, . . . . .	80
Scott (Mrs), Mansion House Road, Donation by. Inscribed Silver Ring Brooch, . . . . .	535
Scott (Gideon), Donation by. Three-legged Pot of Bronze, Stone Ball, and Clay Pipe, found at Dodhead, . . . . .	78
Sculptured Stones of West Highlands, Objects carved on, . . . . .	70
——— Stones of Scotland, Figures and Symbols of, . . . . .	74
——— Stone with "Spectacle Ornament," found at Bilton, Yorkshire, . . . . .	177
——— Stones at St Vigean's Church, Notice of Recent Discovery of, . . . . .	494
——— and Inscribed Stones at Kirkmadrine, Wigtownshire, Notices of, . . . . .	568
——— ——— near Whithorn, Notice of, . . . . .	578
——— Stone built into the Wall of the Mill at Drumore, Wigtownshire, Notice of, . . . . .	582
——— Slabs from Nimroud, Donation of, . . . . .	6
——— Marble Slabs, Donation of Fragments of, . . . . .	6
Seton (Alexander), of Gordon, First Earl of Huntly, . . . . .	279

	PAGE
Seton (George), Donation by. "The Convent of St Catherine of Sienna," 4to, 1871, . . . . .	367
Shale or Lignite, Donation of Fragments of Rings of, from Broch of Cinn Trölla, Sutherlandshire, . . . . .	54
Shearer (R. Innes), Donation of Plans of Brochs, &c., by, . . . . .	539
Shell Burning for Lime, . . . . .	51
Shell Heap at Hillswick, Shetland, Donation of Collection from, . . . . .	56
Shell Heaps at Inveravon, . . . . .	45
—— in Denmark, . . . . .	49
—— in America, . . . . .	49
—— of the Malay Peninsula, . . . . .	51
—— in Corsica, . . . . .	51
Shetland, Measurements of Skull of Small Ox from, . . . . .	620
Shiel ls, Wooden, found in Blair Drummond Moss, . . . . .	186
—— found in Nydam Moss, Jutland, . . . . .	186
Shilling of Queen Elizabeth, Donation of, . . . . .	394
Sibbald (Robert), M.D., on Ancient Scottish Wild Cattle, . . . . .	608
Silver Ingots from the Cuerdale Hoard, Donation of, . . . . .	179
—— Pennanular Rings found in a Cist at Rattar, Dunnet, Caithness, Donation of, . . . . .	395, 424
—— Chain or Girdle, Notice of, . . . . .	532
Sim (George), Notices of Coins recently found in Scotland, . . . . .	269, 508
—— Donation of Bronze Armlet by, . . . . .	381
—— Descriptive Catalogue of Roman Consular and Family Coins, by, . . . . .	566
—— Donation by. Oval Medallion in Bronze of Hercules and Omphale, . . . . .	539
Simpson (Sir Walter), Donation by. Collection of the late Sir J. Y. Simpson, Bart., . . . . .	5
—— Donation by, . . . . .	106
Simpson (William), Himalayan Brooches exhibited by, . . . . .	395
—— Notes on Himalayan and Kabyle Brooches, . . . . .	419
Sinkstone for a Handline, Donation of, . . . . .	382
—— found under Leith Pier, Donation of, . . . . .	394
Skene (W. F.), Notice of MS. of Fordun's Chronicle, . . . . .	13
—— Notice of the Probable Author of the Unpublished History of Scot- land attributed to Bishop Elphinstone, . . . . .	447
Slater (Andrew), Donation by. Series of Oak Shingles from the Roof of the old Canongate Tolbooth, . . . . .	156
Smellie (Robert), Donation by. Iron Axe found near Lugat Castle, . . . . .	11
Smith (Dr R. Angus), Descriptive List of Antiquities near Loch Etive, with Remarks on the Growth of Peat, . . . . .	81
—— Analysis of Vitriified Matter from the Vitriified Fort of Dunagoil by, . . . . .	84



	PAGE
Smith (Dr R. Angus), Analysis of Earth from Floor of Lake Dwelling at Ledaig, by, . . . . .	98
——— Descriptive List of Antiquities near Loch Etive, . . . . .	396
Smith (Dr John Alexander), Notice of Ancient Feeding-Bottles for Infants, . . . . .	106
——— Notice of a Cinerary Urn containing a small Urn, in which were the Bones of a Child, . . . . .	189
——— Notice of the Shingled Roof of the Canongate Tolbooth by, . . . . .	162
——— Notice of supposed Charter Chest of Johnny Faa, . . . . .	264
——— Notice of the Discovery of Remains of the Elk in Scotland, &c., . . . . .	297
——— Notes on the Ancient Cattle of Scotland, . . . . .	587
Smyth (C. Piazzi), Donation by. Pamphlet of Extracts from the Thirteenth Volume of Observations at the Royal Observatory, Edinburgh, . . . . .	505
Snawdun, . . . . .	33
Socket Stone for a Revolving Spindle, Donation of, . . . . .	9
Somerled of the Isles, . . . . .	98
Somerled Macdougall, . . . . .	99
Spectacle Ornament on Sculptured Stone at Bilton, Yorkshire, . . . . .	177
Spinning, Notes of Evidences of, in Brochs or Pietish Towers, . . . . .	548
——— with Spindle and Distaff, . . . . .	549
——— Whorl Ornamented, . . . . .	548
Spear Head of Bronze found at Glentrool, Kirkeudbrightshire, . . . . .	357
——— of Flint found in Machermore Loch, Donation of, . . . . .	357
Spear Heads of Obsidian from Easter Island, Donation of, . . . . .	11
Spurs from Abyssinia, Donation of, . . . . .	462
Stair (Earl of), Donation by. Collection from the Crannog of Loch Inch-Crindil, . . . . .	381
Standing Stone of Clach Dhairmid, . . . . .	104
Standing Stones near Dun Macuisneachan, . . . . .	86
——— ——— Lines of, Donation of Plans of, . . . . .	444
——— ——— in Urquhart, Notices of, . . . . .	256
Stanley (Dean), his Notice of the Inscribed Stones at Kirkmadrine, . . . . .	573
Stanley (Hon. W. Owen), Donation by. "Memoirs of Remains in Holyhead Island," 8vo, 1871, . . . . .	367
Stenart (Henry), Urn found at Windyhall, near Rothesay, exhibited by, . . . . .	463
Stevenson (W.), Donation of Bronze Palstave found at Windshiel, Dunse, . . . . .	79
Stewart (James), son of Murdoch, Duke of Albany, . . . . .	15
Stewart (Mrs), Sweethope, Donation by. Set of Bagpipes that belonged to Prince Charles Edward, . . . . .	504
Stephens (Professor George), Copenhagen, Notice of a Runic Ring found at Cramond, by, . . . . .	458
Stephens (Professor George), Notice of a Runic Door from Iceland, by, . . . . .	458
Stirling (William), Donation by. Shilling of Queen Elizabeth, . . . . .	394

	PAGE
Stone, with Cavities on opposite sides, found in a Weem at Kildrummy, .	220
——— Ball found at Dodhead, Donation of, . . . . .	78
——— found at Broxmouth Ward, Haddington, Donation of, .	220
——— with six projecting Discs, Donation of, . . . . .	393
——— Balls, found in the Broch of Bowermadden, Caithness, . .	247
——— found in the Broch of Brounaben, Caithness, . . . . .	245
——— from Broch of Yarhouse, Caithness, . . . . .	243
——— Celt of extraordinary Size found at Watten, Caithness, . .	184
——— Polished, found at Chapelheron, near Whithorn, . . . .	445
——— Polished, with Mark of Handle, found at Ervie, Kirk- cudbrightshire, . . . . .	460
——— Celts, Donation of, . . . . .	10
——— Polished, found at Drumour, Glenshee, Forfarshire, . .	174
——— Circle at Achnaerce, . . . . .	104
——— Remains of, near Loch Creran, . . . . .	88, 89
——— at Dun Cathich, . . . . .	103
——— at Lochnell, . . . . .	103
——— Circles, Donation of Plans and Sketches of, . . . . .	444
——— Cists in Urquhart, Notices of, . . . . .	254
——— Cup from Broch of Cinn Trölla, Sutherlandshire, Donation of, .	54
——— Oval, found in the Broch of Bowermadden, Caithness, Donation of, . . . . .	247
——— Disc from Cinn Trölla, Sutherlandshire, Donation of, . . .	55
——— Perforated, found in the Broch of Bowermadden, Caithness, .	247
——— Discs, from Broch of Yarhouse, Caithness, . . . . .	243
——— found in the Broch of Brounaben, Caithness, . . . . .	245
——— Hammer, Polished, found at Glenhead, Doune, . . . . .	39
——— found at Turriff, Donation of, . . . . .	155
——— Polished, found in Horned Cairn at Ormiegill, Ulbster, Caithness, . . . . .	245
——— found at Chapelton, Ardrossan, exhibited, . . . . .	383
——— found near Saltcoats, exhibited, . . . . .	383
——— Implement found at Callachally, Island of Mull, Donation of, .	537
——— Mould found at Timpandean, exhibited, . . . . .	462
——— found at Kilmailie, Inverness-shire, Donation of, . . . .	248
——— for Buckles, found in Canisbay, Caithness, Donation of, .	248
——— Mortar found in the Broch of Brounaben, Caithness, . . . .	245
——— Mortars from Broch of Cinn Trölla, Sutherlandshire, Donation of, .	53
——— from Broch of Yarhouse, Caithness, . . . . .	243
——— Object of Polished Serpentine found at Broxmouth Ward, Dona- tion of, . . . . .	79
——— Pounders or Hammer-Stones from Broch of Yarhouse, Caithness, .	243

	PAGE
Stone Pounders found in the Broch of Brounaben, Caithness, . . .	245
——— Vessels from Unst, Shetland, . . .	242
——— ——— with Handles, found in Unst, Shetland, Donation of, . . .	538
——— Whorl found at Turriff, Donation of, . . .	155
——— ——— ornamented with a Floral Pattern, found at Gourlaw, Roslin, Donation of, . . .	249
——— Whorls from the Broch of Bowermadden, Caithness, Donation of, . .	247
——— ——— found in the Broch of Old Stirkoke, Caithness, . . .	247
——— ——— from Broch of Cinn Trölla, Sutherlandshire, Donation of, . .	54
Stoneykirk, Inscribed Stones in Parish of, . . .	568
Stuart (John, LL.D.), Donation by. "Illustrations of the Topography and Antiquities of Aberdeen and Banff," vol. i., . . .	184
——— His Notice of the Inscribed Stones at Kirkmadrine, . . .	574
——— Notice of a curious Carved Bone Object found at Fortrie, Ellon, . .	547
Stuart (Prince Charles Edward), Donation of a Set of Bagpipes which belonged to, . . .	504
Stretton (Thomas, M.D.), Donation by. "Celtic Origin of Greek and Latin," 8vo, . . .	80
Sword, the, carved on Sculptured Stones, . . .	70
Taap (William), Donation by. Hardhead of Francis and Mary, 1551, . .	539
Tait (Lawson), Donation by. Pair of Handcuffs, . . .	79
Tappock, the, Torwood, . . .	29
Target, Highland, with Cognisance of the Lord of the Isles, Notice of, . .	185
Targets, Highland, Where were they made? . . .	188
Taylor (David), Donation by. "The Funerals of Patrick Forbes, Bishop of Aberdeen," printed by Edward Raban, 1635, 8vo, . . .	539
Taylor (James), Donation by. "Bible printed by James Watson, Edin- burgh, 1722," folio, . . .	222
Tealing, Notice of an Underground Chamber at, . . .	548
——— Donation of a Human Skull from a Short Cist at, . . .	155
Teesdale (Rev. F. D.), Donation by. Terra-Cotta Figures of a Dove, . . .	505
Terra-Cotta Figure of a Dove, Donation of, . . .	505
Tetinae, Ancient, . . .	106
——— of Earthenware, Donation of, . . .	6
Thomas (Robert), Donation by. Two Polished Celts, . . .	153
Thomas (Capt. F. W. L.), Notices of Ancient Churches in Uist, &c., . .	338
Thorfinn, Earl of Orkney, buried in the Howe of Hoxa, South Ronaldsay, .	361
Tillicoultry Castle, . . .	41
Tin, Portions of, found at Achertyre, Morayshire, . . .	435
——— Pennanular Rings of, found in an Urn at Dundon Beacon, . . .	439
——— and Bronze Articles found together in Sweden, . . .	441

	PAGE
Tin, Blocks of, discovered in Britain, . . . . .	442
Tinned Bronze Celts, Notice of, . . . . .	428
Tiree, Bronze Tortoise Brooch and Pin, found in, . . . . .	446, 532
Todd (William), Sketches of Inscribed Stones at Kirkmadrine by, . . . . .	570
Tolbooth, the Canongate, Notice of the Shingled Roof of, . . . . .	162
——— Date of Erection of, . . . . .	165
——— Inscription on, . . . . .	166
——— Donation of Shingles from, . . . . .	156
Toothache, Charm to Cure, Donation of, . . . . .	57
Traill (William, M.D.), Notice of Excavations in the Broch of Burrian, North Ronaldsay, . . . . .	547
——— Donation by. Stone with Incised Cross and Ogham Inscription, . . . . .	366
Traill (Professor T. S.), Donation by Executors of. Collection of Antiquities from Egypt and Orkney, . . . . .	5
Trevelyan (Arthur), Donation by. Bead of Shale, . . . . .	11
Troddan Castle, Broch of, in Glenelg, . . . . .	38
Truel Fair, Monifieth, . . . . .	71
Tumuli at Auchterless, Notice of, . . . . .	159
Tungrians, Cohort of, Legionary Tablet by, . . . . .	480
Turnbull (John), Donation by. Vase of Clay of peculiar Form, found at Assouan, . . . . .	505
Turner (Professor William), on Fossil Bovine Remains in Britain, . . . . .	653
——— on the Occurrence of the Sperm Whale in the Scottish Seas, . . . . .	360
Turriff, Aberdeenshire, Stone Hammers, Whorl, and Arrow Head from, . . . . .	155
Uisneach, Legend of the Sons of, . . . . .	398
Unst, Shetland, Ancient Indian Coin found at, . . . . .	511
Urn, "Food Vessel" Type, Donation of, . . . . .	10
——— Cinerary, containing a small Urn in which were the Bones of a Child, found at Wester Buckleyvie, Fife, Notice of, . . . . .	189
——— found at Glenhead, Doune, . . . . .	39
——— found in a Cave near Dun Macuisneachan, . . . . .	82
——— found in a Cairn near Dun Macuisneachan, . . . . .	88
——— found at Callachally, Island of Mull, Donation of, . . . . .	537
——— found in a Cist at Clendrie, parish of Inch, Wigtownshire, . . . . .	571
——— with Spoon (?) of Horn, found near Inverurie, Notice of, . . . . .	203
——— found in a Cairn at Migvie, Donation of, . . . . .	366
——— found at Murthly, Notice of the Contents of, . . . . .	268
——— found at Windyhall, near Rothesay, exhibited, . . . . .	463
Urns found at Auchterless, Notice of, . . . . .	159
——— Small, Cup shaped and pierced with Holes, Notices of, . . . . .	192
——— found at Ardoe, Aberdeenshire, Notice of, . . . . .	269



	PAGE
Urquhart, Elginshire, Donation of Flint Implements, &c., from, . . . . .	238
——— Notices of Early Antiquities in, . . . . .	250
Vitrified Fort of Dunsinane, . . . . .	380
——— of Dun Macuisneachan, . . . . .	81-83, 397
——— of Dun Deardhuil, . . . . .	399
——— of Dunagoil, in Bute, . . . . .	81
——— at Duntroon, . . . . .	407
——— of Dun Scathaig, . . . . .	399
——— on the Greater Cumbræ, . . . . .	86
Vitrified Stones at Wallace Camp, . . . . .	40
Wales, Ancient Cattle of, . . . . .	609
Walker (John), of Ravensby, Donation of Clay Loom-Weights by, . . . . .	176
Wallace (Walter), Donation by. Three Heads of Terra-Cotta, . . . . .	381
Warbeck, Perkyn, . . . . .	540
Warburton, Lower, Parish of St Cyrus, Bone Cave at, . . . . .	630
Watten, Caithness, Bronze Palstave found in a Moss at, . . . . .	183
Weaving in Pictish Towers, Notes on Evidences of, . . . . .	553
——— Comb used in the operation of, . . . . .	555-559
Weavers, Bone Implement for smoothing the Web used by, . . . . .	561
Weem or Underground House at Kildrummy, Aberdeenshire, . . . . .	220
——— at Kinord, Aberdeenshire, . . . . .	455
Wells in Vitrified Forts, . . . . .	85
Whetstone, Donation of, . . . . .	10
——— found below Salisbury Crags, Donation of, . . . . .	248
——— found in the Broch of Old Stirkoke, Caithness, . . . . .	247
Whetstones from Broch of Yarhouse, Caithness, . . . . .	244
Windshiel, Dunse, Donation of Bronze Palstave found at, . . . . .	79
——— Donation of Celt of whitish Sandstone found at, . . . . .	78
Wilson (Andrew), Donation by. Three Ingots of Silver from the Cuerdale Find, . . . . .	179
Whale, Sperm, Tooth of, Donation of, . . . . .	360
——— ——— Notes of the Occurrence of, in the Scottish Seas, by Professor William Turner, . . . . .	361
——— Donation of Vessel formed of Vertebra of, from Cinn Trölla, Suther- landshire, . . . . .	56
Whalefirth, Shetland, Origin of the name, . . . . .	362
White (Captain T. P.), Observations on the Value of Rubbings in the Pre- paration of Monumental Drawings, . . . . .	60
——— Notes on the Ecclesiastical Antiquities of Kintyre, Argyllshire, . . . . .	227
Whorl of Clay Slate found in Gleniron, Donation of, . . . . .	357
Whorls of Stone from Broch of Cinn Trölla, Sutherlandshire, Donation of, . . . . .	54

	PAGE
Whorl of Lead from Cinn Trölla, Donation of, . . . . .	54
Wigton (Archibald), Earl of, . . . . .	448
Wilson (Rev. George), Donation by. Celt of Greenstone, &c., found near Glenluce, . . . . .	356
——— Notes on the Crannogs of Wigtownshire, . . . . .	368
——— Notes of Stone Cists found in the parish of Carsecreuch, Wigtownshire,	517
Wolfenbüttel MS. of Fordun's Chronicle, . . . . .	13
Wooden Vessel, Oval, single piece, found in a Moss at Ardgour, Inverness- shire, . . . . .	220
Woodward (Henry), Account of the Finding of a Skeleton of the Urus near Cambridge, with hole in the Skull, supposed to have been made by a Stone Celt, . . . . .	670
Wyllie (W. M.), Donation by. Bronze Forgeries said to have been found in the Thames, . . . . .	382
Youatt (M.), on Ancient British Cattle, . . . . .	597, 609, 639
Young (Rev. James G.), Donation by. Sculptured Stone from Monifieth, .	59
Yule (General Patrick), Donation by. "The Military History of Eugene and Marlborough," 2 vols. folio, 1836, . . . . .	367



















